

Statement of Basis

for the DRAFT CAAPP Permit for:

Source Name:

Accurate Dispersions

Statement of Basis No.: 98030121-201411

I.D. No.: 031297ACG

Permit No.: 98030121

Date Prepared: November 12, 2014

Permitting Authority:

Illinois Environmental Protection Agency
Bureau of Air, Permit Section
217/785-1705

This Statement of Basis is being provided to USEPA and any interested parties as required by Section 39.5(8)(b) of the Illinois Environmental Protection Act.

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PREFACE

Purpose Of This Document

Accurate Dispersions, located at 192 West 155th Street in South Holland, Cook County, Illinois, has applied for a renewal of the Clean Air Act Permit Program (CAAPP) operating permit that the Illinois Environmental Protection Agency (Illinois EPA) issued on November 29, 2006. The CAAPP is the program established in Illinois for operating permits for large stationary sources of air pollution. The conditions in a CAAPP permit are enforceable by the Illinois EPA, the USEPA, and the public. The Renewal CAAPP Permit contains conditions identifying the applicable state and federal air pollution control requirements that apply to the source, including emission limitations and appropriate compliance procedures.

This document is a requirement of the permitting authority in accordance with Section 502(a) of the Clean Air Act, 40 CFR 70.7(a)(5), and Section 39.5(8)(b) of the Illinois Environmental Protection Act (Act). Pursuant to Section 39.5(8)(b) of the Act, the Illinois EPA has prepared this Statement of Basis in order to provide the permitting authority, the public, the source, and the USEPA with "the legal and factual basis for the Draft CAAPP permit conditions, including references to the applicable statutory or regulatory provisions". To that end, this document indicates how the Draft CAAPP Permit was developed and how the various applicability and technical matters that form the basis of the Draft CAAPP Permit were applied.

Brief Source Description

The source (SIC Code 2851) manufactures colored dispersions (colorants) which are used by other manufacturers to tint or color paints or other products. The dispersions/colorants are typically heavily pigmented, high percent solids, viscous liquids that can be solvent based or water based.

Limitations

This Statement of Basis is not enforceable and only sets forth the legal and factual basis for the Draft CAAPP Permit Conditions (Chapters I and II). Chapter III contains supplemental material that would assist in educating interested parties about this source and the Draft CAAPP Permit. The Statement of Basis does not shield the source from enforcement actions or its responsibility to comply with existing or future applicable regulations. Nor does the Statement of Basis constitute a defense to a violation of the Federal Clean Air Act or the Illinois Environmental Protection Act including implementing regulations.

This document does not purport to establish policy or guidance.

INTRODUCTION

The Clean Air Act Permit Program (CAAPP) is the operating permit program established in Illinois for major stationary sources as required by Title V of the federal Clean Air Act and Section 39.5 of the Illinois Environmental Protection Act. The Title V Permit Program (CAAPP) is the primary mechanism to apply the various air pollution control requirements established by the Clean Air Act to major sources, defined in accordance with Title V of the Clean Air Act. The Draft CAAPP Permit contains conditions identifying the state and federal applicable requirements that apply to the source. The Draft CAAPP Permit also establishes the necessary monitoring and compliance demonstrations. The source must implement this monitoring to demonstrate that the source is operating in accordance with the applicable requirements of the permit. The Draft CAAPP Permit identifies all applicable requirements for the various emission units as well as establishes detailed provisions for testing, monitoring, recordkeeping, and reporting to demonstrate compliance with the Clean Air Act. Further explanations of the specific provisions of the Draft CAAPP Permit are contained in the following Chapters of this Statement of Basis.

In addition, the Illinois EPA has committed substantial resources and effort in the development of an acceptable Statement of Basis (this document) that would meet the expectations of USEPA, Region 5. As a result, this document contains discussions that address applicability determinations, periodic monitoring, streamlining, prompt reporting, and SSM authorizations (as necessary). These discussions involve, where necessary, a brief description and justification for the resulting conditions and terms in this Draft CAAPP Permit. This document begins by discussing the legal basis for the contents of the Draft CAAPP Permit, moves into the factual description of the permit, and ends with supplemental information that has been provided to further assist with the understanding of the background and genesis of the permit content.

It is Illinois EPA's preliminary determination that this source's Permit Application meets the standards for issuance of a "Final" CAAPP Permit as stipulated in Section 39.5(10)(a) of the Illinois Environmental Protection Act (see Chapter I - Section 1.2 of this document).

The Illinois EPA is therefore initiating the necessary procedural requirements to issue a Final CAAPP Permit. The Illinois EPA has posted the Draft CAAPP permit and this Statement of Basis on USEPA website:

<http://www.epa.gov/reg5oair/permits/ilonline.html>

CHAPTER I – LEGAL BASIS FOR THE PERMIT AND PERMIT CONDITIONS

1.1 Legal Basis for Program

The Illinois EPA's state operating permit program for major sources established to meet the requirements of 40 CFR Part 70 are found at Section 39.5 of the Illinois Environmental Protection Act [415 ILCS 5/39.5]. The program is called the Clean Air Act Permitting Program (CAAPP). The underlying statutory authority is found in the Illinois Environmental Protection Act at 415 ILCS 5/39.5. The CAAPP was given final full approval by USEPA on December 4, 2001 (see 66 FR 62946).

1.2 Legal Basis for Issuance of CAAPP Permit

In accordance with Section 39.5(10)(a) of the Illinois Environmental Protection Act, the Illinois EPA may only issue a CAAPP Permit if all of the following standards for issuance have been met:

- The applicant has submitted a complete and certified application for a permit, permit modification, or permit renewal consistent with Sections 39.5(5) and (14) of the Illinois Environmental Protection Act, as applicable, and applicable regulations (Section a. below);
- The applicant has submitted with its complete application an approvable compliance plan, including a schedule for achieving compliance, consistent with Section 39.5(5) of the Illinois Environmental Protection Act and applicable regulations (Section b. below);
- The applicant has timely paid the fees required pursuant to Section 39.5(18) of the Illinois Environmental Protection Act and applicable regulations (Section c. below); and
- The applicant has provided any additional information as requested by the Illinois EPA (Section d. below).

a. Application Status

The source submitted an application for a Renewal CAAPP Permit on February 28, 2011. The source is currently operating under an application shield resulting from a timely and complete renewal application submittal. This Draft CAAPP Permit addresses application content and necessary revisions to meet the requirements for issuance of the permit.

b. Present Compliance Status

At the time of this Draft CAAPP Permit, there were no pending State or Federal enforcement actions against the source; therefore, a Compliance Schedule is not required for this source. The source submitted an approvable Compliance Plan as part of its Certified Permit Application. The source has certified compliance with all applicable rules and regulations. In addition, the Draft CAAPP Permit requires the source to certify its compliance status on an annual basis.

c. Payment of Fees

The source is current on payment of all fees associated with operation of the emission units.

d. Additional Information

The source provided all the necessary additional application material as requested by the Illinois EPA.

1.3 Legal Basis for Conditions in the CAAPP Permit

This industrial source is subject to a variety of federal and State Implementation Plan (SIP) regulations, which are the legal basis for the conditions in this permit (see Sections a. and b. below). Also, the CAAPP provides the legal basis for additional requirements such as periodic monitoring, reporting, and recordkeeping. The following list summarizes those regulations that form the legal basis for the conditions in this Draft CAAPP Permit and are provided in the permit itself as the origin and authority.

a. Applicable Federal Regulations

This source operates emission units that are subject to the following federal regulations.

40 CFR Part 60 - Subpart A	NSPS General Provisions
40 CFR Part 60 - Subpart JJJJ	NSPS for Stationary Spark Ignition Internal Combustion Engines
40 CFR Part 63 - Subpart A	NESHAP General Provisions
40 CFR Part 63 - Subpart CCCCCC	NESHAP for Paints and Allied Products Manufacturing Area Sources
40 CFR Part 63 - Subpart ZZZZ	NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)
40 CFR Part 68	Risk Management Plan
40 CFR Part 82- Subpart F	Ozone Depleting Substances

b. Applicable SIP Regulations

This source operates emission units that are subject to the following SIP regulations:

35 IAC Part 201	Permits and General Provisions
35 IAC Part 205	Emissions Reduction Market System (ERMS)
35 IAC Part 212	Visible and Particulate Matter Emissions
35 IAC Part 214	Sulfur Limitations
35 IAC Part 218	Organic Material Emission Standards and Limitations
35 IAC Part 244	Episode Action Plans
35 IAC Part 254	Annual Emissions Report

CHAPTER II – FACTUAL BASIS FOR THE PERMIT AND PERMIT CONDITIONS

2.1 Source History

The Illinois EPA first issued a CAAPP permit to Accurate Dispersions (New CAAPP Permit) on November 23, 1999. The New CAAPP Permit expired on November 23, 2004. On November 29, 2006, the Illinois EPA issued the first Renewal CAAPP Permit to the source and that permit expired on November 29, 2011. On February 28, 2011, Accurate Dispersions submitted an application for a Renewal CAAPP Permit consistent with Section 39.5(5)(n) of the Act and 35 Ill. Adm. Code 270.301(d). The source is currently operating under an application shield resulting from a timely and complete renewal application submittal.

The Illinois EPA has not undertaken any other air permitting actions at this source since the first Renewal CAAPP Permit was issued.

2.2 Description of Source

Address: 192 West 155th Street, South Holland, Illinois 60473
SIC Code: 2851
County: Cook

Accurate Dispersions manufactures colorants and dispersions for use by the paint industry. The dispersions are typically very heavily pigmented, high percent solids, viscous liquids that can be solvent based or water based.

The facility consists of three manufacturing plants (Plants 1, 2 and 3) and one 32,000 square-foot warehouse that is used as a distribution and training center. The basic manufacturing process involves blending of raw materials in tanks and passing the resulting blended material through enclosed mills to produce the desired colored dispersions.

Significant emission units at the source include a number of mills, mixers, tanks, and other equipment as shown in Table 1, below. Emissions from the source primarily come from the process tanks, tank washers, equipment washers, and associated emissions control devices. Dispersers (mixers) and enclosed Eiger mills do not directly generate emissions.

Table 1. Significant Emission Units Located at the Source

<i>Emission Units</i>	<i>Pollutants Being Regulated</i>	<i>Original Construction Date</i>	<i>Modification/ Reconstruction Date</i>	<i>Air Pollution Control Devices or Measures</i>	<i>Monitoring Devices</i>
Plant 1 Dispersion and Colorant Manufacturing Equipment					
High Speed Disperser P1X1	SO ₂ , PM/PM ₁₀ , VOM and HAPs	6/1989	N/A	Dust Collector (DC-1); Thermal Oxidizer (TO-1)	Pressure Drop; Thermal Oxidizer Combustion Temperature
High Speed Disperser P1X2		8/1986			
High Speed Disperser P1X3		8/1986			
High Speed Disperser P1X4		3/1995			
High Speed Disperser P1X5		4/1996			
High Speed Disperser P1X6		8/1990			
High Speed Disperser P1X7		8/1990			

				Air Pollution Control Devices or Measures	
Emission Units	Pollutants Being Regulated	Original Construction Date	Modification/ Reconstruction Date		Monitoring Devices
Eiger Mill P1E1		8/1986			
Eiger Mill P1E2		8/1986			
Eiger Mill P1E3		1/1989			
Eiger Mill P1E4		6/1990			
Eiger Mill P1E5		8/1990			
Eiger Mill P1E6		2/1992			
Eiger Mill P1E7		10/1992			
Eiger Mill P1E8		10/1992			
Eiger Mill P1E9		8/1994			
Eiger Mill P1E10		12/2014			
Eiger Mill P1L1 (Lab)		6/1991			
Eiger Mill P1L2 (Lab)		1/1987			
Tank Washer TW		5/1995			
Equipment Washer PW1		4/1995			
Equipment Washer PW2		6/1995			
Equipment Washer PW3		12/1995			
Portable Tanks (40-500 gal), 64 total		Various			
Plant 2 Dispersion and Colorant Manufacturing Equipment					
High Speed Disperser P2X1	PM/PM ₁₀ , VOM and HAPs	1/1995	N/A	Dust Collector (DC-2)	Pressure Drop
High Speed Disperser P2X2		1/1995			
High Speed Disperser P2X3		1/1995			
High Speed Disperser P2X4		1/1995			
High Speed Disperser P2X5		1/1995			
High Speed Disperser P2X6		1/1995			
High Speed Disperser P2X7		1/1995			
High Speed Disperser P2X8		1/1995			
High Speed Disperser P2X9		1/1995			
High Speed Disperser P2X10		10/1996			
High Speed Disperser P2X11		10/1996			
High Speed Disperser P2X12		10/1996			
High Speed Disperser P2X13		10/1996			
High Speed Disperser P2X14		10/1996			
Eiger Mill P2E1		1/1995			
Eiger Mill P2E2		1/1995			
Eiger Mill P2E3		1/1995			
Eiger Mill P2E4		6/1995			

				Air Pollution Control Devices or Measures	Monitoring Devices
Emission Units	Pollutants Being Regulated	Original Construction Date	Modification/ Reconstruction Date		
Eiger Mill P2E5		10/1996			
Eiger Mill P2E6		10/1996			
Eiger Mill P2L1 (Lab)		1/1995			
Eiger Mill P2L2 (Lab)		10/1996			
Portable Tanks (<=500 gal), 6 total		Various			
Fixed Tanks P2T1 through P2T18 (18 tanks)		1/1995			
Plant 3 Dispersion and Colorant Manufacturing Equipment					
Eiger Mill P3E1	Opacity, PM/PM ₁₀ , VOM, GHGs and HAPs	1/2000	N/A	Dust Collector (DC-3)	Pressure Drop
Eiger Mill P3E2		1/2000			
Eiger Mill P3E3		1/2000			
Eiger Mill P3E4		1/2000			
Eiger Mill P3E5		1/2000			
Eiger Mill P3E6		11/2004			
Eiger Mill P3E7		11/2004			
Eiger Mill P3E8		11/2004			
Eiger Mill P3E9		11/2004			
Eiger Mill P3E10		11/2004			
Mixer/Dispenser P3X1		1/2000			
Mixer/Dispenser P3X2		1/2000			
Mixer/Dispenser P3X3		1/2000			
Mixer/Dispenser P3X4		1/2000			
Mixer/Dispenser P3X5		1/2000			
Mixer/Dispenser P3X6		1/2000			
Mixer/Dispenser P3X7		1/2000			
Mixer/Dispenser P3X8		1/2000			
Mixer/Dispenser P3X9		1/2000			
Mixer/Dispenser P3X10		1/2000			
Mixer/Dispenser P3X11		1/2000			
Mixer/Dispenser P3X12		1/2000			
50 HP Dispenser P3X13		12/2002			
Mixer/Dispenser P3X14		11/2004			
Mixer/Dispenser P3X15	11/2004				
Mixer/Dispenser P3X16	11/2004				
Mixer/Dispenser P3X17	11/2004				
Mixer/Dispenser P3X18	11/2004				
Mixer/Dispenser P3X19	11/2004				
Mixer/Dispenser P3X20	11/2004				
Mixer/Dispenser P3X21	11/2004				

<i>Emission Units</i>	<i>Pollutants Being Regulated</i>	<i>Original Construction Date</i>	<i>Modification/ Reconstruction Date</i>	<i>Air Pollution Control Devices or Measures</i>	<i>Monitoring Devices</i>
Mixer/Dispenser P3X22		11/2004			
Mixer/Dispenser P3X23		11/2004			
Mixer/Dispenser P3X24		11/2004			
Mixer/Dispenser P3X25		11/2004			
Mixer/Dispenser P3X26		12/2002			
Portable Tank (500 gal)		12/2002			
Can Filling Line P3FL1		1/2000			
Can Filling Line P3FL2		11/2004			
Parts Washer P3PW1		1/2000			
Parts Washer P3PW2		1/2000			
Fixed Tanks P3T1 through P3T18 (18 tanks)		1/2000			
Fixed Tanks P3T19 through P3T36 (18 tanks)		11/2004			
De-aeration Unit P3D1		11/2004			
De-aeration Unit P3D2		11/2004			

2.3 Single Source Status

This source does not have any collocated facilities that would be considered a single source with this facility based on information found in the certified application.

2.4 Ambient Air Quality Status for the Area

The source is located in an area that is currently designated nonattainment for the National Ambient Air Quality Standards for ozone and PM_{2.5} and attainment or unclassifiable for all other criteria pollutants (carbon monoxide, lead, nitrogen dioxide, sulfur dioxide). (See 40 CFR Part 81 - Designation of Areas for Air Quality Planning Purposes)

2.5 Source Status

The source requires a CAAPP permit because it has the potential to emit 100 tons per year or more of volatile organic compounds. See Section 39.5(2)(c) of the Act. This source maintains synthetic minor limits (see Condition(s) 4.1.4(a)) for the following regulated pollutants: Hazardous Air Pollutants (HAP). This source is considered a "natural minor" for the following regulated pollutants: PM₁₀, PM_{2.5}, nitrogen oxides (NO_x), carbon monoxide (CO), sulfur dioxide (SO₂), and/or GHG.

This source is not currently subject to any "applicable requirements," as defined by Section 39.5(1) of the Act, for emissions of greenhouse gases (GHG) as defined by 40 CFR 86.1818-12(a), as referenced by 40 CFR 52.21(b)(49)(i). There are no GHG-related requirements under the Illinois Environmental Protection Act, Illinois' State Implementation Plan, or the Clean Air Act that apply to this facility, including terms or conditions in a Construction Permit addressing emissions of GHG or BACT for emissions of GHG from a major project

at this facility under the PSD rules. In particular, the USEPA's Mandatory Reporting Rule for GHG emissions, 40 CFR Part 98, does not constitute an "applicable requirement" because it was adopted under the authority of Sections 114(a)(1) and 208 of the Clean Air Act. This permit also does not relieve the Permittee from the legal obligation to comply with the relevant provisions of the Mandatory Reporting Rule for this facility.

2.6 Annual Emissions

The following tables list actual and potential annual emissions (tons) of criteria pollutants and HAPs for this source, as reported by the source in the Annual Emission Reports (AER) sent to the Illinois EPA:

Table 2. Actual and Potential Criteria Pollutant Emissions Reported in the Application (Tons/Year).

<i>Pollutant</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>PTE*</i>
CO	0.25	0.21	0.13	0.17	0.21	
NO _x	0.29	0.25	0.16	0.20	0.25	
PM	5.29	5.48	5.33	5.69	6.06	11.05
PM ₁₀	-----	-----	-----	-----	-----	4.84
PM _{2.5}	-----	-----	-----	-----	-----	-----
SO ₂	-----	-----	-----	-----	-----	-----
VOM	18.96	21.00	27.54	27.61	23.80	58.18
GHG as CO ₂ e	-----	-----	-----	-----	-----	-----
HAP (-)	3.86	2.83	3.34	3.30	4.17	See below

Table 3. Actual and Potential HAP Emissions Reported in the Application.

<i>HAP Name</i>	<i>PTE (TPY) *</i>	<i>Typical Maximum Emissions (TPY)</i>	<i>2013 Actual Emissions (TPY)</i>
Certain Glycol Ethers	2.00	1.00	1.10
Cumene	0.20	0.10	0.07
Ethyl Benzene	1.00	0.60	0.27
Ethylene Glycol	2.00	1.00	0.71
Isophorone	0.20	0.10	0.05
Methyl Isobutyl Ketone	2.00	1.00	0.29
Toluene	1.00	0.50	0.21
Xylene	3.00	2.00	1.40
Triethylamine	0.05	0.02	0.01
Naphthalene	0.05	0.02	0.06
Total (All HAPs)	11.50	6.34	4.17
Maximum HAP	3.00	2.00	1.40

* The potential to emit (PTE) as included in Tables 2 and 3, above, is an estimate based on the application. Because of the emissions calculation methodology required by this permit, the Illinois EPA believes that the true PTE of the source may be higher than the values reported in Tables 2 and 3, above.

2.7 Fee Schedule

The following table lists the approved annual fee schedule (tons) submitted in the Source's permit application:

Table 4. Fee Schedule.

<i>Pollutant</i>		<i>Tons/Year</i>
Volatile Organic Material	(VOM)	77.84
Sulfur Dioxide	(SO ₂)	0.00
Particulate Matter	(PM)	14.37
Nitrogen Oxides	(NO _x)	1.00
HAP, not included in VOM or PM	(HAP)	0.10
Total		93.31

2.8 SIP Permit Facts (T1 Limits)

2.8.1 General Information

CAAPP Permits must address all “applicable requirements”, which includes the terms and conditions of preconstruction permits issued under regulations approved by USEPA in accordance with Title I of the CAA (See definition of applicable requirements in Section 39.5(1) of the Illinois Environmental Protection Act). Preconstruction permits, commonly referred to in Illinois as Construction Permits, derive from the New Source Review (“NSR”) permit programs required by Title I of the CAA. These programs include the two major NSR permit programs: (1) the Prevention of Significant Deterioration (“PSD”) program¹ and (2) the nonattainment NSR program.² These programs also encompass state construction permit programs for projects that are not major.

In the CAAPP or Illinois’s Title V permit program, the Illinois EPA’s practice is to identify requirements that are carried over from an earlier Title I permit into a New or Renewed CAAPP Permit as “TI” conditions (i.e., Title I conditions). Title I Conditions that are revised as part of their incorporation into a CAAPP Permit are further designated as “TIR”. Title I Conditions that are newly established through a CAAPP Permit are designated as “TIN”. It is important that Title I Conditions be identified in a CAAPP Permit because these conditions will not expire when the CAAPP Permit expires. Because the underlying authority for Title I Conditions comes from Title I of the CAA and their initial establishment in Title I Permits, the effectiveness of T1 Conditions derives from Title I of the CAA rather than being linked to Title V of the CAA. For “changes” to be made to Title I Conditions, they must either cease to be applicable based on obvious circumstances, e.g., the subject emission unit is permanently shut down, or appropriate Title I procedures must be followed to change the conditions.

The following construction permits have previously been issued by the Illinois EPA to the source and have been incorporated into this CAAPP permit:

Table 5. Active Construction Permits Previously Issued to the Source.

<i>Permit No.</i>	<i>Date Issued</i>	<i>Subject</i>
00010010	03/07/2001	Construction of 5 Mills, 12 Mixers/dispersers, 18 Tanks, 2 Parts Washers, 1 Can Filling Line, 1 Lab Spray Booth.
02120005	01/15/2003	Construction of 50 hp Disperser in Building 4 (Plant 3).

<i>Permit No.</i>	<i>Date Issued</i>	<i>Subject</i>
04110035	01/31/2005	Construction of 5 Mills, 13 Mixers/Dispersers, 18 Tanks, 1 Can Filling Line, and 2 de-aeration units).
91020049	04/19/1991	Construction of 12 Blending Tanks and 3 Eiger Mills.
92110060	01/28/1993	Construction of 3 Eiger Mills and 6 portable blending tanks.
95020097	04/03/1995	Construction of 7 portable blending tanks (#33-#39).
95030015	03/31/1995	Construction of one thermal oxidizer with an afterburner.
95040080	05/24/1995	Construction of 2 Eiger Mills, 4 high speed dispersers, and 6 stationary blending tanks.

2.8.2 Extraneous or Obsolete Conditions³

In addition to Title 1 construction permits, the source has previously been issued the following Federally Enforceable State Operating Permits (FESOPs) whose requirements were incorporated into the last permit. Since the source is now a CAAPP source, these FESOPs are no longer in effect.

Table 6. Extraneous or Obsolete Conditions and Permits.

<i>Permit No.</i>	<i>Date Issued</i>	<i>Subject</i>
86070063	04/07/1995	Operation of 26 paint blending tanks, 3 eiger mills, 1 dust collector, 7 blending tanks, and 1 thermal oxidizer.
94090055	02/06/1997	Operation of 7 mills, 13 dispersers, 21 blending tanks, a spray booth, a solvent recovery system, a carbon adsorber, and a dust collector.

2.8.3 Revised Title 1 Conditions (T1R)

As allowed by Title I of the CAA, the source has requested that the Illinois EPA establish conditions in this permit that would revise or supersede emission limits in previously issued construction permits, consistent with the information provided in the CAAPP application. The source has addressed the applicability of, and continued compliance with, Title I of the CAA, specifically 35 IAC Part 203, Major Stationary Sources Construction and Modification and/or 40 CFR 52.21, Prevention of Significant Deterioration (PSD). At the request of the source, the Illinois EPA has established new VOM and production limits for Plants 1, 2 and 3, PM limits for Plants 2 and 3, and a source-wide HAP limit.

Each manufacturing plant at the source is currently subject to a number of VOM and production limits that apply to certain emission units located in each plant. In addition, some VOM and production limits currently apply to groups of emission units comprising of equipment that is located in both Plants 1 and 2. Plants 2 and 3 are also subject to multiple PM limits.

However, due to the nature of the emissions calculation methodology required by this permit and the type of operations conducted at each

plant, it is impractical for the source to demonstrate continuous compliance with the equipment-specific emission limits. Thus, the Illinois EPA is proposing to consolidate emission limits at each plant so that each plant is only subject to one monthly and one annual VOM or PM emission limit. To ensure practical enforceability of the new emission limits, the Illinois EPA has also established new production limits. The new T1R limits would supersede specific limits previously established in construction permits issued to the source.

The proposed VOM limits, which are contained in Conditions 4.1.2(d)(i)(B), 4.2.2(c)(i)(B) and 4.3.2(c)(i)(B) of the permit, would continue to ensure that the construction and/or modification addressed in previous construction permits does not constitute a new major source or major modification pursuant to 35 IAC Part 203 and/or 40 CFR 52.21.

Additionally, as further discussed in Section 3.6.2 of this Statement of Basis, at the request of the source, the Illinois EPA has established synthetic minor limits to limit the source's HAP emissions to area source levels. These limits, which are found in Condition 3.3(a) ensure that the source is not subject to federal requirements that apply to major sources, including 40 CFR Part 63, Subpart HHHHH (NESHAP for Miscellaneous Coating Manufacturing).

CHAPTER III - SUPPLEMENTAL DISCUSSIONS REGARDING THE PERMIT

The information provided in this Chapter of the Statement of Basis is being provided to assist interested parties in understanding what additional information may have been relied on to support this draft CAAPP permit.

3.1 Environmental Justice Discussions

This source is located in an area that has been identified as a potential concern for Environmental Justice (EJ) consideration.

While the Illinois EPA is sensitive to the location of this facility in a potential EJ community, Title V does not provide for substantive emission control requirements beyond those arising under currently applicable regulations. Thus, when issuing a CAAPP Permit for this facility, the Illinois EPA does not have the authority to impose additional emission control requirements to reduce emissions beyond the levels provided for by applicable state and federal regulations. At the same time, CAAPP Permits do not allow for additional emissions.

Having a facility subject to a CAAPP Permit provides benefits for air quality, the public and the environment generally. CAAPP Permits require more reporting on a facility's compliance status than is required by underlying state operating permits. For example, the requirements for semi-annual reports for all monitoring and annual compliance certifications only become applicable upon the effectiveness of a CAAPP Permit. In addition, CAAPP Permits generally provide clarity and awareness of applicable regulations and the mechanisms by which sources must comply with these regulations. CAAPP Permits add to the compliance checks put on facilities. Where a facility has outstanding compliance deficiencies, CAAPP Permits may establish compliance schedules and other additional conditions for monitoring and reporting.

With this Statement of Basis, the Illinois EPA has made very clear the applicable emission limitations, standards, and other enforceable terms and conditions, as well as attendant monitoring, reporting, recordkeeping, and certifications to assure compliance. The Illinois EPA has provided an explanation of same, as well as a justification for why the conditions that assure compliance are appropriate. The level of detail in the Statement of Basis is typically involved and is in recognition of the public interest in the permitting of this complex facility in a potential EJ community. The Statement of Basis has been provided to the USEPA for its review. The extremely detailed explanation of the requirements, particularly Periodic Monitoring, applicable to this source is intended to further meaningful public participation.

3.2 Emission Testing Results

The source has performed the following performance testing to demonstrate compliance with emission limits. The source has not conducted any other emissions testing.

Table 7. Emissions Testing Results.

Test Date	Pollutant(s) Tested	Emission Unit(s) Tested	Purpose of the Test and Test Method(s) Used	Test Results
2/29/1996	VOM	Regenerative Thermal Oxidizer (RTO)	Compliance with VOM destruction efficiency limits and manufacturer guarantees. EPA RM 18 at inlet and outlet of the RTO.	Inlet: 8.70 lb/hr Outlet: < 0.10 lb/hr Destruction efficiency: > 98.9%

3.3 Compliance Reports (Annual Certifications, Semiannual Monitoring, NESHAP, etc.)

A review of the source's compliance reports demonstrates the source's ability to comply with all applicable requirements.

3.4 Field Inspection Results

A review of the source's latest field inspection report dated May 22, 2012 demonstrates the source's ability to comply with all applicable requirements.

3.5 Historical Non-Compliance

There is no historical non-compliance reported for this source.

3.6 Source Wide Justifications and Rationale

Table 8. Source Wide Applicable Requirements Summary.

<i>Applicable Requirement</i>	<i>Type</i>	<i>Location in the Permit</i>
Fugitive Particulate Matter (35 IAC 212.301 and 35 IAC 212.314)	Applicable Standard	Condition 3.1(a)
Ozone Depleting Substances (40 CFR Part 82, Subpart F)	Applicable Standard	Condition 3.1(b)
Asbestos Demolition and Renovation (40 CFR 61 Subpart M and Section 9.13(a) of the Act)	Applicable Standard	Condition 3.1(c)
Fugitive PM Operating Program (35 IAC 212.309, 212.310, 212.312)	Applicable Plan	Condition 3.2(a)
Episode Action Plan (35 IAC 244.141 and 244.142)	Applicable Plan	Condition 3.2(d)
Source-wide Synthetic Minor Limits (Section 39.5(7)(a) of the Act)	Applicable Requirement	Condition 3.3
Emissions Reduction Market System (ERMS) (35 IAC Part 205)	Applicable Standard	Condition 3.4

3.6.1 Fugitive Particulate Matter Emissions

Sections 35 IAC 212.301 and 212.314 of the Illinois SIP prohibit the source from causing or allowing the emission of fugitive particulate matter from any process "that is visible by an observer looking generally

toward the zenith at a point beyond the property line of the source" unless the wind speed is greater than 25 miles per hour (mph). This fugitive particulate matter standard applies at all times except when wind speeds exceed 25 mph as provided by 35 IAC 212.314. Therefore, the monitoring approach for this standard should generate data that is adequate to demonstrate that compliance is maintained at all times.

Due to the nature of the operations conducted at the facility, the Illinois EPA does not expect the source to generate significant quantities of particulate matter or visible emissions during normal operations. This is because the source is subject to stringent worker safety standards imposed by the Occupational Safety and Health Administration (OSHA) and because significant quantities of particulate matter emissions would imply that valuable product or raw materials are being wasted at the facility. Any threats to the standard would only occur during such activities as maintenance, process upsets, poorly maintained plant roads, etc. To address the limited possibility of particulate matter and/or visible emissions from the source, as required by Section 39.5 of the Act, the Illinois EPA has addressed monitoring for the particulate matter and visible emissions standards as follows: (see Condition 3.1(a)(ii))

- ✓ Semi-annual observations at the property line of the source for visible emissions of fugitive particulate matter.
- ✓ Additional observations of impacts at the property line and impacts of individual emission units must be conducted upon request by the Illinois EPA;
- ✓ Paving of all normal traffic pattern roads and parking facilities;
- ✓ Recordkeeping of all visible emissions observations;
- ✓ Prompt reporting of deviations.

The requirement for semi-annual observations for fugitive particulate matter recognizes the fact that the standard applies at all times even though the likelihood of having visible emissions beyond the property boundary of the source is very low. Pursuant to 35 IAC 212.107, the Permittee is not required to use EPA Method 22 to conduct these observations. Thus, "walkthrough" observations conducted along the property line at a frequency of once every six months will satisfy this monitoring requirement. The Illinois EPA has not previously documented non-compliance with the fugitive particulate matter standard and no air quality complaints have been filed with the Agency.

This source is required to maintain a fugitive PM Operating Program pursuant to 35 IAC 212.309, 212.310 and 212.312 (see Condition 3.2(a)). This program would further minimize particulate matter and/or visible emissions. Also, pursuant to 35 IAC 212.306, all normal traffic pattern roads and parking facilities which are located on manufacturing property must be paved or treated with water, oils or chemical dust suppressants. All paved areas must be cleaned on a regular basis. All areas treated with water, oils or chemical dust suppressants shall have the treatment applied on a regular basis, as needed, in accordance with the operating program required by 35 IAC 212.309, 212.310 and 212.312.

The combination of the above work practices and semi-annual observations at the property line would be sufficient to determine if additional observations should be conducted on any individual emission unit. Note that the Permittee is not precluded from conducting additional observations on individual emission units should it suspect that any of the emissions standards are being threatened. The Illinois EPA may order additional evaluations based on air quality complaints, a review of inspection reports and/or compliance certifications, and for other reasons as allowed by the Act.

3.6.2 HAP Synthetic Minor Limits [T1R]

At the request of the source, the Illinois EPA has established synthetic minor limits to limit the source's HAP emissions to area source levels. These limits, which are found in Condition 3.3(a) ensure that the source is not subject to federal requirements that apply to major sources, including 40 CFR Part 63, Subpart HHHHH (NESHAP for Miscellaneous Coating Manufacturing). The original permit required the source to keep its HAP emissions below 10 tons/year for each individual HAP and 25 tons per year for all HAPs combined. After reviewing the source's emissions inventory and its reported potential emissions, the Illinois EPA has determined that more stringent limits are appropriate, consistent with the actual emissions reported by the source in its emissions inventory reports and in the permit application (see Table 3). The new limits are:

- 0.8 tons/month and 8 tons/year of any individual HAP;
- 2.0 tons/month and 20 tons/year of all HAPs combined.

To ensure practical enforceability of these limits, the Illinois EPA has included monthly and annual emission limits as shown above, and is requiring the Permittee to comply with unit-specific production and operational restrictions and monitoring requirements.

To ensure compliance with the synthetic minor limits, the Permittee will be required to:

- ✓ Calculate HAP emissions monthly from each emission unit at the source (including insignificant emission units) following the emissions estimation hierarchy specified in Condition 3.1(e) of the permit;
- ✓ Comply with production, operational and work practice standards and associated monitoring and recordkeeping requirements for VOM emissions as addressed by the unit-specific requirements in Sections 4, 5 and 6 of the permit;
- ✓ Base emissions calculations on the most current VOM and HAP composition data for the associated raw material as provided in the material safety data sheets (MSDSs) or other specification data sheets supplied by the material supplier(s);
- ✓ Comply with specific recordkeeping and reporting requirements.

The source currently uses an in-house software to calculate HAP and VOM emissions from its paint manufacturing operations. The software uses

equations from Section 4.0 of STAPPA/ALAPCO/USEPA Emission Inventory Improvement Program's (EIIP), Methods for Estimating Air Emissions from Paint, Ink, and Other Coating Manufacturing Facilities, Volume II: Chapter 8 (February 2005). The permit requires the Permittee to retain its current emissions calculation methodology provided that it documents to the satisfaction of the Illinois EPA all of the assumptions it uses. See Section 3.6.4 for a detailed discussion of the emissions methodology that the Illinois EPA expects the Permittee to follow.

Based on the emissions estimation hierarchy specified in the permit, the Illinois EPA expects that the vast majority of emissions estimates will be based on information from the previous approved source test required by the permit, EIIP equations, material balances, and emission factors for insignificant emission units at the source (e.g., the emergency generator). This approach to monitoring compliance with the synthetic minor limits, including the required records, will assure compliance with the limits.

3.6.3 Emissions Reduction Market System (ERMS)

The ERMS (35 IAC Part 205) is a "cap and trade" market system for major stationary sources located in the Chicago ozone nonattainment area. It is designed to reduce VOM emissions from stationary sources to contribute to reasonable further progress toward attainment, as required by Section 182(c) of the CAA.

This source is considered a "participating source" for purposes of the ERMS.

The ERMS addresses VOM emissions during a seasonal allotment period from May 1 through September 30. Participating sources must hold "allotment trading units" (ATUs) for their actual seasonal VOM emissions. Each year participating sources are issued ATUs based on allotments set in the sources' CAAPP permits. These allotments are established from historical VOM emissions or "baseline emissions" lowered to provide the emissions reductions from stationary sources required for reasonable further progress. Pursuant to 35 IAC 205.150, the allotment of ATUs to this source is 135 ATUs per seasonal allotment period. See Condition 3.4.

By December 31 of each year, the end of the reconciliation period following the seasonal allotment period, each source shall have sufficient ATUs in its transaction account to cover its actual VOM emissions during the preceding season. A transaction account's balance as of December 31 will include any valid ATU transfer agreements entered into as of December 31 of the given year, provided such agreements are promptly submitted to the Illinois EPA for entry into the transaction account database. The Illinois EPA will then retire ATUs in sources' transaction accounts in amounts equivalent to their seasonal emissions. When a source does not appear to have sufficient ATUs in its transaction account, the Illinois EPA will issue a notice to the source to begin the process for Emissions Excursion Compensation.

In addition to receiving ATUs pursuant to their allotments, participating sources may also obtain ATUs from the market, including ATUs bought from other participating sources and general participants in the ERMS that hold ATUs (35 IAC 205.630) and ATUs issued by the Illinois EPA as a consequence of VOM emissions reductions from an Emissions Reduction

Generator or an Intersector Transaction (35 IAC 205.500 and 35 IAC 205.510). During the reconciliation period, sources may also buy ATUs from a secondary reserve of ATUs managed by the Illinois EPA, the "Alternative Compliance Market Account" (ACMA) (35 IAC 205.710). Sources may also transfer or sell the ATUs that they hold to other sources or participants (35 IAC 205.630).

The Illinois EPA has reviewed the ERMS requirements in Condition 3.4 and determined that no additional monitoring is necessary beyond the recordkeeping and reporting requirements in 35 IAC Part 205.

3.6.4 Emissions Calculation Methodology

a. General

The periodic monitoring requirements in the permit include, as appropriate, regular or periodic performance testing, recordkeeping and work practice provisions. The permit does not require continuous emissions monitoring (CEM) as CEM systems would either be impractical to reliably install and operate or would not be expected to yield more accurate information than the monitoring specified in the permit (e.g., use of material balances). However, the permit does require periodic performance testing, recordkeeping and work practice provisions designed to serve as monitoring. Where performance testing or use of specific emissions estimation software, is not required, the Illinois EPA expects the Permittee to rely on emission factors to calculate emissions. Whether or not the permit specifies the emission factors to be used, the Permittee must document the emission factors it uses including a demonstration of their appropriateness to the specific emission units from which emissions are being calculated.

In all situations, the Illinois EPA expects the Permittee to follow the following hierarchy when selecting the appropriate methodology for calculating emissions: (See Condition 3.1(e))

- i. CEM data (both compliance and/or indicator monitors);
- ii. Site specific emission factor based on performance testing that directly measures the emissions in conjunction with material balance calculations and process data;
- iii. Emissions information from equipment vendor(s) and manufacturer's emission performance guarantee(s);
- iv. Actual emissions data from similar equipment where the Illinois EPA has approved the use of such data (in order of preference):
 - A. CEM data (both compliance and/or indicator monitors);
 - B. Performance test data that directly measures the emissions;
 - C. Emission modelling information.
- v. Industry-derived emission factors, including the appropriate emissions calculation equations contained in STAPPA/ALAPCO/USEPA Emission Inventory Improvement Program's (EIIP) surface evaporation model for calculating emissions from surface evaporation of VOM

from open or partially covered mixing tanks during coating mixing operations, Methods for Estimating Air Emissions from Paint, Ink, and Other Coating Manufacturing Facilities, Volume II: Chapter 8 (February 2005 or later version);

- vi. Emission factors published in the latest version of EPA's Compilation of Air Pollutant Emission Factors (AP-42), with "A"-rated AP-42 emission factors being considered first and the lower rated emission factors in ascending alphabetical order second (B through E);
- vii. Engineering estimation and/or judgment.

See, generally, Introduction to AP-42, Volume I, Fifth Edition - January 1995 (AP-42 Introduction) at 2-5 and Figure 1. The record should demonstrate that this hierarchy was followed. Note that the Permittee's choice of emission calculation methodology based on the above hierarchy does not preclude any person, such as the Illinois EPA, USEPA, the public and other regulatory agencies, from using other credible evidence to establish compliance or noncompliance with applicable requirements as provided by the Act. See 42 U.S.C. § 7413 and 62 Fed. Reg. 8314.

Under the above hierarchy, AP-42 emission factors (if available) should be treated as the last resort before using engineering judgment to estimate emissions. In situations where representative source-specific data cannot be obtained, the Illinois EPA believes that emissions information from equipment vendors, particularly emission performance guarantees or actual test data from similar equipment, is a better source of information for calculating emissions than an AP-42 emission factor. If AP-42 emission factors must be used, A-rated AP-42 emission factors should be considered before the lower rated emission factors.

While it may not be necessary in some situations to review each individual data source that USEPA relied upon in developing the AP-42 emission factors, such review may be appropriate in cases where USEPA has reported significant source-to-source variability in the measured emission rates. Because AP-42 emission factors represent an average of emissions from different sources, it is possible that some of the sources evaluated by USEPA in developing the AP-42 emission factors being considered have significantly different emissions characteristics than the source being evaluated. Therefore, it is crucial that the Permittee's record include a clear justification of the appropriateness of the selected AP-42 emission factor for the specific emission unit being evaluated. As USEPA has previously stated: "Before simply applying AP-42 emission factors to predict emissions from new or proposed sources, or to make other source-specific emission assessments, the user should review the latest literature and technology to be aware of circumstances that might cause such sources to exhibit emission characteristics different from those of other, typical existing sources. Care should be taken to assure that the subject source type and design, controls, and raw material input are those of the source(s) analyzed to produce the emission factor. This fact should be considered, as well as the age of the information and the user's knowledge of technology advances." See AP-42 Introduction at 4.

The general equation for emissions estimation is:

$$E = A \times EF \times (1-ER/100) \quad \text{Eq. (1)}$$

where:

E = emissions;
A = activity rate;
EF = emission factor, and
ER = overall emission reduction efficiency, %

To calculate VOM, HAP and PM emissions from the source, the Permittee will generally use the equations in Section 4.0 of STAPPA/ALAPCO/USEPA Emission Inventory Improvement Program (EIIP), Methods for Estimating Air Emissions from Paint, Ink, and Other Coating Manufacturing Facilities, Volume II: Chapter 8 (February 2005 or later version). These equations have been shown to generate acceptable emissions information from the majority of equipment located at the source. The source has translated these equations into an in-house emissions estimation software called the "Batch Air Module" or BAM and the Illinois EPA has found the source's methodology to be acceptable.

As an alternative to the use of EIIP equations, the permit allows the source to use material balances to calculate VOM and HAP emissions. The equations for material balances are illustrated below. These equations may be revised as appropriate based on other credible evidence regarding the source's actual emissions.

b. VOM and HAP Emissions

Use the appropriate equations in Section 4.0 of EIIP, Methods for Estimating Air Emissions from Paint, Ink, and Other Coating Manufacturing Facilities, Volume II: Chapter 8 (February 2005 or later version) to calculate VOM emissions from all processes covered by Section 4.0 of EIIP. The Permittee may use the following material balance equations (as applicable) for any processes not specifically covered by Section 4.0 of EIIP:

- i. Use material balances to calculate the net amount of VOM- and HAP-containing material *i* used in Plant *x*.

Net material used, M_i (lb) =

$$\{ \text{Total raw material used (lb)} \} - \{ \text{Reclaimed material (lb)} \} - \{ \text{Material lost to offsite transfers (lb)} \}$$

Eq. (2)

- ii. If a thermal oxidizer is used to control VOM and HAP emissions (e.g., Plant 1), calculate captured/controlled VOM and HAP emissions using the following equation:

Captured VOM (HAP) Emissions, VOM or HAP_c (lb) =

$$M_i \times VOM(HAP)_i \times A_i \times \left(\frac{VOM \text{ or } HAP_{inlet}}{A_i \times M_i} \right) \times (1 - C) \quad \text{Eq. (3)}$$

Where:

$$M_i = \text{Value from Eq. (2)}$$

$VOM(HAP)_i$ = Amount of VOM or HAP in each pound of material i (lb/lb)

A_i = Percentage of material i 's VOM or HAPs emitted, reported as a fraction. Minimum value for production solvents is 0.02 (i.e., assume at least 2% of the production solvent VOM or HAP is emitted to the atmosphere). For other materials, estimate based on MSDS, a site-specific assessment, or other publications. The 2% factor represents the worst-case solvent loss rate "under well-controlled conditions" as reported in Section 6.4 of USEPA's AP-42, Fifth Edition, Volume I (May 1983).

EIIP equations can be used in lieu of this emission factor.

$\frac{VOM \text{ or } HAP_{inlet}}{A_i \times M_i}$ = Fraction of emitted VOM or HAPs sent to and captured by the thermal oxidizer. The fraction of HAPs sent to the thermal oxidizer can generally be assumed to be equal to the fraction of VOM sent to the thermal oxidizer;

$VOM \text{ or } HAP_{inlet}$ = VOM or HAP concentration at the inlet of the thermal oxidizer as determined from the last approved source test;

C = Control efficiency of the thermal oxidizer from the last approved source test, reported as a fraction.

- iii. Calculate uncaptured VOM and HAP emissions using either equation (4) (if a thermal oxidizer is used to control VOM and HAP emissions, e.g., in Plant 1) or equation (5) (if a thermal oxidizer is not used, e.g., in Plants 2 and 3):

Uncaptured VOM (HAP) Emissions, $VOM \text{ or } HAP_u$ (lb) =

$$M_i \times VOM(HAP)_i \times A_i \times \left\{ 1 - \left(\frac{VOM \text{ or } HAP_{inlet}}{A_i \times M_i} \right) \right\} \quad \text{Eq. (4)}$$

Or

Uncaptured VOM (HAP) Emissions, $VOM \text{ or } HAP_u$ (lb) =

$$M_i \times VOM(HAP)_i \times A_i \quad \text{Eq. (5)}$$

Where A_i , M_i , $VOM(HAP)_i$, and $VOM \text{ or } HAP_{inlet}$ are as defined above.

- iv. For units that are not paint and allied products manufacturing operations (e.g., emergency generator, direct combustion units that have been deemed to be insignificant based on size or emissions, etc.), use appropriate emission factors and equation (1), above.
- v. Total VOM (or HAP) emissions from Plant x are calculated using the following equation:

$$VOM \text{ or } HAP_x = VOM \text{ or } HAP_{u,x} + VOM \text{ or } HAP_{c,x} + VOM \text{ or } HAP \text{ from none - paint manufacturing emission units serving Plant } x$$

Eq. (6)

c. PM Emissions

- i. Use material balances to calculate the net amount of PM-containing material i used in Plant x . In general, for paint manufacturing operations, only raw materials containing pigment are expected to result in quantifiable PM emissions.

Net pigment – containing material used, M_i (lb) =

$$\{ \text{Total raw material used (lb)} \} - \{ \text{Reclaimed material (lb)} \} - \{ \text{Material lost to offsite transfers (lb)} \}$$

Eq. (7)

- ii. Calculate captured/controlled PM emissions by the dust collector using the following equation:

Controlled PM Emissions, PM_c (lb) =

$$M_i \times PM_i \times A_i \times PM_{DC} \times (1 - C)$$

Eq. (8)

Where:

M_i = Value from Eq. (7)

PM_i = Amount of PM in each pound of material i (lb/lb)

A_i = Percentage of material i 's PM emitted, reported as a fraction. Minimum value is 0.01 (i.e., assume at least 1% of the material's PM is emitted to the atmosphere).

The 1% PM emission rate represents the worst-case percentage of pigment handled by the source that is emitted to the atmosphere according to Section 6.4 of USEPA's AP-42, Fifth Edition, Volume I (May 1983).

PM_{DC} = Fraction of emitted PM sent to and captured by the dust collector. If there is no sufficient documentation to support a value for PM_{DC} , the Permittee shall assume that $PM_{DC} = 0$. In general, acceptable documentation includes, but is not limited to, the following records attesting to the accuracy and appropriateness of the selected value:

- ✓ Emissions tests conducted at the dust collector inlet at the facility;

- ✓ Emissions tests conducted at the dust collector inlet at a similar facility;
- ✓ Results of other emissions study conducted at the facility or similar facility.

The Illinois EPA notes that the Permittee has historically assumed that at least 50% of the PM is sent to the dust collector; however, the Illinois EPA does not have sufficient justification at this time for the 50% value.

C = Control efficiency of the dust collector, reported as a fraction, with supporting documentation.

The proposed permit requires the Permittee to conduct testing for the control efficiency of Plant 1's dust collector (DC-1). The Illinois EPA expects the Permittee to base its estimate of dust collector control efficiency for Plant 1 on the test results. For Plants 2 and 3, due to the similarity of those dust collectors to Plant 1's dust collector, the Permittee should compare Plant 1's test results to the specifications provided by the manufacturers to determine the appropriate dust collector control efficiencies for Plants 2 and 3.

iii. Calculate uncaptured PM emissions using equation (9):

Uncaptured PM Emissions, $PM_U(lb) =$

$$M_i \times PM_i \times A_i \times (1 - PM_{DC}) \quad \text{Eq. (9)}$$

Where M_i , A_i , PM_i and PM_{DC} are as defined above.

- iv. For units that are not paint and allied products manufacturing operations (e.g., emergency generator, direct combustion units that have been deemed to be insignificant based on size or emissions, etc.), use appropriate emission factors and equation (1), above.
- v. Total PM Emissions from Plant x are calculated using the following equation:

$$PM_x = PM_{U,x} + PM_{C,x} + PM_{\text{from none - paint manufacturing emission units serving Plant x}} \quad \text{Eq. (10)}$$

3.6.5 Other Requirements

As specified in Table 8, the permit includes requirements for ozone depleting substances (40 CFR Part 82, Subpart F), asbestos (40 CFR 61, Subpart M, and Section 9.13(a) of the Act) and episode action plans (35 IAC 244.141 and 244.142). The Illinois EPA has reviewed the applicable provisions of these rules and determined that no additional monitoring is

necessary beyond the monitoring, recordkeeping and reporting requirements inherent in these rules.

Note that 40 CFR 61, Subpart M, only applies generally as the source has indicated in its application that it does not manufacture paints and allied products containing asbestos.

3.6.6 Non-Applicability Discussion

The Illinois EPA has not made any source-wide non-applicability determinations for this source.

3.6.7 Prompt Reporting Discussion

Prompt reporting of deviations for source wide emission units has been established as 30 days. See rationale in Chapter III Section 3.9.

3.7 Emission Unit Justifications and Rationale

3.7.1 Plant 1 Manufacturing Equipment (Condition 4.1)

Due to the low-emitting nature of the operations conducted in Plant 1, and based on a review of the source's annual emissions reports, the Illinois EPA does not expect the equipment in Plant 1 to generate significant quantities of emissions during normal operations.

The vast majority of the manufacturing activity in Plant 1 occurs inside of a building. Emissions from Plant 1 primarily come from process tanks, tank washers, equipment washers, and associated emissions control devices. The dispersers (mixers) and enclosed Eiger mills do not directly generate emissions but only emit indirectly through the process tanks associated with that equipment.

Plant 1 employs a dust collector (DC-1) that serves to control PM emissions and minimize visible emissions. Plant 1 also has a thermal oxidizer (TO-1) that is used to control VOM emissions but could also reduce PM and visible emissions.

Table 9. Plant 1 Applicable Requirements Summary

<i>Applicable Requirement</i>	<i>Type</i>	<i>Location in the Permit</i>
Visible Emissions (Opacity) Requirement (35 IAC 212.123(a))	Applicable Standard	Condition 4.1.2(a)(i)
PM Requirement (35 IAC 214.321(a))	Applicable Standard	Condition 4.1.2(b)(i)
VOM Requirement (35 IAC 218.301)	Applicable Standard	Condition 4.1.2(d)(i)(A)
VOM and Work Practice Requirements (35 IAC Part 218)	Applicable Standard	Condition 5.1.2
SO ₂ Requirement (35 IAC 214.301)	Applicable Standard	Condition 4.1.2(c)(i)
VOM Requirements - T1 (Construction Permits 95020097, 91020049, 95040080, 95020097, 92110060 and 91020049)	Applicable Limits	Condition 4.1.2(d)(i)(B)

Applicable Requirement	Type	Location in the Permit
Production and Operational Limitations - T1 (Construction Permits 95020097, 95020097, 91020049 and 95030015)	Applicable Limits	Conditions 4.1.2(e) (i) (A) through (F)
HAP Requirements (40 CFR Part 63, Subpart CCCCCC)	Applicable Standard	Condition 5.2.1

a. Visible Emissions (i.e., Opacity) and the PM Standard in 35 IAC 214.321(a)

As required by Section 39.5 of the Act, the Illinois EPA has addressed monitoring for the particulate matter and visible emissions standards as follows: (see Conditions 4.1.2(a)(ii) and 4.1.2(b)(ii))

- ✓ Periodic visible emissions observations as follows:
 - o Weekly observations using EPA RM 22 or RM 9 for visible emissions from the dust collector and thermal oxidizer until at least 4 consecutive weeks of data indicates no visible emissions or the opacity of the emissions as determined by RM 9 is less than 20%. Thereafter, visible emissions observations may revert to a monthly basis. If no visible emissions are detected, or the opacity of the emissions as determined by RM 9 is less than 20%, after three consecutive months of observations, the observation frequency can be reduced to a quarterly basis. Monitoring shall revert to a weekly basis if any observation indicates the opacity of the emissions as determined by RM 9 to be 20% or higher. Monthly observations may resume after another 4 consecutive weeks of data indicates no visible emissions or the opacity of the emissions as determined by RM 9 is less than 20%. Quarterly monitoring may resume after no visible emissions are detected, or the opacity of the emissions as determined by RM 9 is less than 20%, after three consecutive months of additional observations;
- ✓ Use of a specific emissions calculation methodology for purposes of verifying compliance with the process weight rate emission limits in Condition 4.1.2(b);
- ✓ Compliance with specific recordkeeping, production and work practice requirements in the permit.

Under the proposed visible emissions monitoring requirements, if visible emissions are observed using RM 22 or the opacity of the emissions as determined by RM 9 is 20% or higher, the Permittee is required to take corrective action within 4 hours of such observation. Corrective action may include, but is not limited to, maintenance and repair, and/or adjustment of operating parameters of the emission unit. The Permittee must record a deviation in the monitoring record if a RM 9 measurement indicates an average opacity of 20% or higher over the RM 9 observation period. The no visible emissions threshold using EPA RM 22 and the 20% opacity threshold using EPA RM 9 are more stringent compliance thresholds than the 30 percent opacity limit allowed under 35 IAC 212.123(a). Thus,

the required observations would assure compliance with the 30% opacity standards. The observation frequency of weekly, monthly or quarterly, depending on the outcome of the previous observations, is adequate in this case because past inspections by the Illinois EPA have not revealed any issues with visible emissions at the source and the Illinois EPA does not have a record of air quality complaints from the community.

Because of the nature of the operations in Plant 1, the Illinois EPA believes that the use of material balances based on pigment usage may be the most accurate and conservative means of calculating emissions for the majority of the equipment in Plant 1. Never-the-less, the permit allows the Permittee to request authorization (through a permit revision) to use an alternate method for calculating PM emissions provided the Permittee can adequately justify the proposed methodology. The specified methodology requires the Permittee to take into account the solids content of each raw material as specified in the Material Safety Data Sheet (MSDS) or other manufacturer-supplied specification data sheet. In addition, the Illinois EPA is specifying that the Permittee shall assume that at least 1.0% by weight of the pigments used is emitted as particulate matter from pigment handling or 20 lbs of PM per ton of pigment used, whichever is higher, unless an alternate emission factor is approved by the Illinois EPA based on a review of site-specific information. The 1.0% emission rate is based on information provided in Section 6.4 of USEPA's AP-42, Fifth Edition, Volume I (May 1983) suggesting that 0.5-1.0% of pigment used is emitted as PM. To ensure that the PM emissions estimates adequately account for all PM emissions, the Illinois EPA is asking the Permittee to use the upper limit of the AP-42 estimated emission factor unless it can demonstrate that an alternate emission factor is appropriate.

Historically, the Permittee has assumed a PM emission rate of 0.5% in its construction permit applications and other emission calculations. However, the Illinois EPA does not have sufficient justification at this time for the 0.5% emission rate. Section 39.5 of the Act requires the Permittee to utilize the most accurate emissions calculation methodologies to assure compliance with all applicable requirements. The Illinois EPA recognizes that a change to the PM emission factor as proposed in the permit may necessitate revisions to previously issued construction permits in order to better reflect actual and potential emissions of the source.

Due to insufficient data on the actual dust collector efficiency during normal operations and the overall PM emissions at the source, the Illinois EPA is not specifying the dust collector efficiency to be used by the Permittee when calculating emissions nor are we specifying how much of the PM emitted by individual equipment is sent to the dust collector. Instead, we are requiring the Permittee to conduct testing of Plant 1's dust collector within 180 days of this permit becoming effective to verify the dust collector control efficiency specified by the manufacturer. The permit requires the Permittee to maintain records sufficient to demonstrate to the satisfaction of the Illinois EPA that appropriate capture efficiencies and/or assumptions were made by the Permittee.

To ensure that the dust collector operates effectively, the permit requires monthly inspections of the dust collector followed by prompt (i.e., within 15 days) repair if necessary. This inspection frequency is

appropriate in this case because the Illinois EPA's records indicate that the dust collectors at the source are generally well-maintained. For a well-maintained dust collector, the Illinois EPA does not expect the effectiveness of the dust collector to vary significantly over this monthly inspection cycle. Additionally, the Permittee is required to replace the dust collector filter cartridges at least once every 3 years.

b. VOM Requirements

As discussed above, VOM emissions from Plant 1 are controlled by a regenerative thermal oxidizer (RTO). According to the permit application, about 50% of all VOM emitted in Plant 1 is sent to the RTO for destruction. The RTO is "guaranteed" by the manufacturer to destroy at least 98% of the VOC sent to it. Based on the results of the last emissions test conducted on the RTO (see Table 7), it appears that the RTO is capable of achieving an even higher VOM destruction efficiency.

The requirements that apply to VOM emissions from Plant 1 are primarily derived from Title 1 construction permits issued to the source and SIP requirements (35 IAC Part 218). These requirements include both numerical emission limits as well as work practice and operational requirements. The construction permit limits address the applicability of Title I of the Clean Air Act, specifically 35 IAC Part 203, Major Stationary Sources Construction and Modification and/or 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits are designed to ensure that the construction and/or modification addressed in the respective construction permits does not constitute a new major source or major modification pursuant to these rules.

The work practice requirements are specified in Condition 5.1.1 while the numeric limits from construction permits and the Illinois SIP are included in Condition 4.1.2(d). Compliance with the work practice requirements is achieved through maintenance of records sufficient to demonstrate that the work practices were followed.

To address compliance with the numeric VOM limits, the Illinois EPA has included the following monitoring requirements in the permit:

- ✓ Use of a specific emissions calculation methodology;
- ✓ Testing of VOM emissions and the VOM destruction efficiency of the affected regenerative thermal oxidizer in accordance with Reference Method 25, 40 CFR 60 Appendix A, within 180 days of this permit becoming effective and every three to five years thereafter (depending on the level of emissions during the last test);
- ✓ Compliance with specific recordkeeping and operational and work practice requirements in the permit.

Due to the nature of the operations in Plant 1, the Illinois EPA believes that the use of material balances, source test results and EIIP equations, as discussed above, is the most accurate and conservative means of calculating VOM emissions for the majority of the equipment in Plant 1. The specified methodology requires the Permittee to take into account the VOM content of each raw material as specified in the Material Safety Data Sheet (MSDS) or other manufacturer-supplied specification data sheet. The Permittee already uses EIIP equations in its

calculations and the Illinois EPA believes that this methodology yields the most reliable estimates of emissions for most equipment in Plant 1 than other available methods. The equations are incorporated in an in-house emissions estimation software termed the Batch Air Module (BAM). The Permittee may continue to use this software to calculate emissions provided the assumptions used are clearly documented and consistent with the permit.

To ensure that the VOM destruction efficiency used in the calculations is representative of actual source operations, the Illinois EPA is requiring the Permittee to conduct initial and subsequent performance tests for VOM emissions and the VOM destruction efficiency of the RTO. This testing ensures that the RTO, which is the primary VOM control device for Plant 1, continues to achieve the level of emissions control "guaranteed" by the manufacturer and assumed in the emissions calculations.

To determine the proportion of VOM sent to the RTO, the Permittee will compare the VOM concentration at the inlet of the RTO, as determined from the last source test required by the permit, to the VOM emission rate calculated through the material balance and EIIP equations.

Most of the VOM and HAPs from paint manufacturing operations occur from solvent usage. USEPA estimates that about 1.0 - 2.0% of all solvents used during the paint products manufacturing operations is lost even under well-controlled circumstances. See AP-42, Section 6.4.1. Therefore, to ensure that VOM and HAP emissions are properly quantified when using a material balance, the Illinois EPA expects the Permittee to assume that at least 2.0% of the amount of VOM contained in all solvents is emitted. The 2.0% emission rate is the upper estimate provided in Section 6.4.1 of AP-42 and is designed to ensure that emissions are not underestimated. As discussed in Section 3.6.4 of this Statement of Basis, the 2% factor represents the worst-case solvent loss rate "under well-controlled conditions." Historically, the Permittee has assumed a solvent loss rate of 1% in its construction permit applications and other emission calculations. However, the Illinois EPA does not have sufficient justification at this time for the 1% solvent loss rate. Section 39.5 of the Act requires the Permittee to utilize the most accurate emissions calculation methodologies to assure compliance with all applicable requirements. The Illinois EPA recognizes that a change to the VOM emission factor as proposed in the permit may necessitate revisions to previously issued construction permits in order to better reflect actual and potential emissions of the source.

Finally, the Illinois EPA is requiring the Permittee to document all of the assumptions it uses to calculate emissions consistent with the emissions calculation methodology in the permit. The permit requires the Permittee to maintain records sufficient to demonstrate to the satisfaction of the Illinois EPA that appropriate capture efficiencies and/or assumptions were used by the Permittee. For this purpose, acceptable records include, but are not limited to:

- ✓ Results from an emissions study conducted at the facility;
- ✓ Results from an emissions study conducted at a similar facility;

- ✓ A theoretical evaluation analyzing the active emissions removal processes in each section of the plant and their documented impact on emissions based on published reports, in-house studies, etc.

The Illinois EPA has not previously documented non-compliance with VOM emission limits or work practices in Plant 1, nor has the Illinois EPA documented any air quality complaints at the source. Therefore, the Illinois EPA believes that the above provisions, in addition to monitoring requirements that address compliance with other applicable requirements, are sufficient to assure compliance with the applicable VOM requirements.

c. Production and Operational Requirements

The production and operational requirements included in the permit are largely derived from construction permits issued to the source. They include production/material utilization limits, a requirement for monthly inspection of all affected equipment, minimum RTO afterburner temperature, and other requirements. These restrictions are primarily designed to assure compliance with the VOM limits discussed above. The production and operational limits also help assure compliance with the HAP synthetic minor limits in Condition 3.3.

To demonstrate compliance with the production and operational requirements, the Permittee must maintain appropriate records. These records will document key information necessary to calculate emissions (e.g., production rates, hours of operation, etc.) and will demonstrate that the necessary inspections and maintenance activities were performed.

d. SO₂ Emissions

The regenerative thermal oxidizer located in Plant 1 uses natural gas as fuel. Combustion of natural gas results in emission of SO₂, nitrogen oxides and other combustion byproducts. Pursuant to 35 IAC 214.301, SO₂ emissions must not exceed 2000 parts per million (ppm) from the affected thermal oxidizer. To ensure compliance with this restriction, the permit requires the Permittee to burn pipeline quality natural gas exclusively in the affected thermal oxidizer, and to maintain specific records.

Pipeline quality natural gas contains very low sulfur levels compared to other common fuels. For example, according to the Energy Information Administration, U.S. coal contains about 1.6% sulfur (consumption-weighted national average) by weight and the oil burned at electric utility power plants ranges from 0.5 to 1.4% sulfur. On-road diesel fuel can currently have as much as 0.0015% by weight of total sulfur (i.e., 15 ppm) while gasoline is only slightly better. Comparatively, natural gas at the burner tip typically has less than 0.0005% sulfur compounds. See Energy Information Administration, Natural Gas 1998: Issues and Trends, http://www.eia.gov/pub/oil_gas/natural_gas/analysis_publications/natural_gas_1998_issues_trends/pdf/chapter2.pdf (page 49). Pipeline quality natural gas typically has sulfur levels of about 0.2 grains per 100 standard cubic feet. See AP-42, Section 1.4. However, sulfur-containing odorants are added to natural gas for detecting leaks thus increasing the overall sulfur content of the gas. Unprocessed natural gas may have higher sulfur levels. Moreover, USEPA requires pipeline quality natural gas to contain no more than 0.5 grains of total sulfur per 100 standard cubic feet (scf) (i.e., about 8.4 ppmv or 0.00084% by volume of sulfur).

See 40 CFR 72.2. Value is estimated using the average ratio of ppmv to gr/100 scf in the gas monitored by PG&E, from 2006 through the second quarter of 2014. See http://www.pge.com/pipeline/operations/sulfur/sulfur_info_values.shtml.

Because the 2000 ppm SO₂ limit is designed to allow compliance by sources when burning a wide range of fuels, it is extremely unlikely that SO₂ emissions from the affected thermal oxidizer would ever come close to violating the 2000 ppm limit when burning natural gas. As shown in the sample calculation below, even if the sulfur content of the pipeline quality natural gas was at its legally allowed limit (i.e., 0.5 gr/100 scf), worst case SO₂ emissions would be significantly less than the 2000 ppm limit:

First, convert sulfur content to SO₂ emissions:

$$\left(\frac{0.5 \text{ gr S}}{100 \text{ scf Nat. Gas}}\right) \times \left(\frac{1000 \text{ scf Nat. Gas}}{\text{hr}}\right) \times \left(\frac{1 \text{ lb S}}{7000 \text{ gr S}}\right) \times \left(\frac{2 \text{ lb SO}_2}{1 \text{ lb S}}\right) = 0.00143 \text{ lb SO}_2/\text{hr}$$

$$\left(\frac{0.00143 \text{ lb SO}_2}{\text{hr}}\right) \times \left(\frac{1 \text{ min}}{7500 \text{ ft}^3 \text{ of exhaust}}\right) \times \left(\frac{1 \text{ hr}}{60 \text{ min}}\right) = 3.18 \times 10^{-9} \frac{\text{lb SO}_2}{\text{ft}^3 \text{ of exhaust}}$$

This sample calculation assumes a maximum natural gas consumption rate of 1000 scf/min. It also assumes an exhaust flow rate of 7500 scf/min based on the last source test conducted on the affected thermal oxidizer.

Then, convert lb SO₂ to ft³ of SO₂ using the ideal gas law:

$$(3.18 \times 10^{-9} \text{ lb SO}_2) \times \left(\frac{1 \text{ Kg SO}_2}{2.2 \text{ lb SO}_2}\right) \times \left[\frac{(8.31 \text{ kPa m}^3 \text{K}^{-1} \text{kmol}^{-1}) \times (298 \text{ K})}{(101.325 \text{ kPa}) \times (64 \text{ Kg SO}_2 \text{ kmol}^{-1})}\right] \times \left(\frac{35.3 \text{ ft}^3 \text{ SO}_2}{1 \text{ m}^3 \text{ SO}_2}\right) \\ = 1.95 \times 10^{-8} \text{ ft}^3 \text{ SO}_2$$

Finally, convert the volumetric concentration to parts per million:

$$\left(\frac{1.95 \times 10^{-8} \text{ ft}^3 \text{ SO}_2}{\text{ft}^3 \text{ of exhaust}}\right) \times \left(\frac{1000000 \text{ ft}^3 \text{ exhaust}}{1 \text{ million ft}^3 \text{ SO}_2}\right) = 0.019 \text{ ppmv SO}_2$$

The permit requires the Permittee to base its SO₂ emissions calculations on the sulfur mass balance, assuming that all of the fuel sulfur is converted to SO₂ emissions upon combustion, and exhaust parameters from the last performance test conducted on the affected thermal oxidizer. The Permittee may propose and the Illinois EPA may approve an alternate method for calculating SO₂ emissions consistent with Condition 3.1(e) of the permit. Since the sulfur content of natural gas is fairly consistent, the Illinois EPA believes that the above mass balance approach to estimating SO₂ emissions is the most appropriate compliance methodology in this case.

e. HAP Emissions

The permit includes federal requirements for HAP emissions from the source. These requirements are found at 40 CFR Part 63, Subpart CCCCCC (see Condition 5.2.1).

The Illinois EPA has reviewed the applicable provisions of this rule and determined that no additional monitoring is necessary beyond the monitoring, recordkeeping and reporting requirements inherent in 40 CFR Part 63, Subpart CCCCCC.

f. Non-Applicability Discussion

Non-applicability determinations specific to Plant 1 are found in Condition 4.1.5 of the permit.

g. Prompt Reporting Discussion

Prompt reporting of deviations has been established as 30 days. See rationale in Chapter III Section 3.9.

3.7.2 Plant 2 Manufacturing Equipment (Condition 4.2)

Due to the low-emitting nature of the operations conducted in Plant 2, and based on a review of the source's annual emissions reports, the Illinois EPA does not expect the equipment in Plant 2 to generate significant quantities of emissions during normal operations.

The vast majority of the manufacturing activity in Plant 2 occurs inside of a building. Emissions from Plant 2 primarily come from process tanks, tank washers, equipment washers, and associated emissions control devices. The dispersers (mixers) and enclosed Eiger mills do not directly generate emissions but only emit indirectly through the process tanks associated with that equipment.

Plant 2 employs a dust collector (DC-2) that serves to control PM emissions and minimize visible emissions.

Table 10. Plant 2 Applicable Requirements Summary

<i>Applicable Requirement</i>	<i>Type</i>	<i>Location in the Permit</i>
Visible Emissions (Opacity) Requirement (35 IAC 212.123(a))	Applicable Standard	Condition 4.2.2(a)
PM Requirement (35 IAC 214.321(a))	Applicable Standard	Condition 4.2.2(b) (i) (A)
PM Requirement - T1 (Construction Permits 92110060 and 95040080)	Applicable Limit	Condition 4.2.2(b) (i) (B) and (C)
VOM Requirement (35 IAC 214.301)	Applicable Standard	Condition 4.2.2(c) (i) (A)
VOM and Work Practice Requirements (35 IAC Part 218)	Applicable Standard	Condition 5.1.2
VOM Requirements - T1 (Construction Permits 00010010, 95040080, 02120005 and 92110060)	Applicable Limits	Condition 4.2.2(c) (i) (B)

Applicable Requirement	Type	Location in the Permit
Production and Operational Limitations - T1 (Construction Permits 92110060, 95040080 and 95030015)	Applicable Limits	Conditions 4.2.2(d)(i)(A) through (D)
HAP Requirements (40 CFR Part 63, Subpart CCCCCC)	Applicable Standard	Condition 5.2.1

a. Visible Emissions (i.e., Opacity) and the PM Standard in 35 IAC 214.321(a)

As required by Section 39.5 of the Act, the Illinois EPA has addressed monitoring for the particulate matter and visible emissions standards as follows: (see Conditions 4.2.2(a)(ii) and 4.2.2(b)(ii))

- ✓ Periodic visible emissions observations as follows:
 - o Weekly observations using EPA RM 22 or RM 9 for visible emissions from the dust collector until at least 4 consecutive weeks of data indicates no visible emissions or the opacity of the emissions as determined by RM 9 is less than 20%. Thereafter, visible emissions observations may revert to a monthly basis. If no visible emissions are detected, or the opacity of the emissions as determined by RM 9 is less than 20%, after three consecutive months of observations, the observation frequency can be reduced to a quarterly basis. Monitoring shall revert to a weekly basis if any observation indicates the opacity of the emissions as determined by RM 9 to be 20% or higher. Monthly observations may resume after another 4 consecutive weeks of data indicates no visible emissions or the opacity of the emissions as determined by RM 9 is less than 20%. Quarterly monitoring may resume after no visible emissions are detected, or the opacity of the emissions as determined by RM 9 is less than 20%, after three consecutive months of additional observations;
- ✓ Use of a specific emissions calculation methodology to verify compliance with the process weight rate emission limits in Condition 4.2.2(b)(i)(A) and the Title 1 limits in Conditions 4.2.2(b)(i)(B) and (C);
- ✓ Compliance with specific recordkeeping, production and work practice requirements in the permit.

Under the proposed visible emissions monitoring requirements, if visible emissions are observed using RM 22 or the opacity of the emissions as determined by RM 9 is 20% or higher, the Permittee is required to take corrective action within 4 hours of such observation. Corrective action may include, but is not limited to, maintenance and repair, and/or adjustment of operating parameters of the emission unit. The Permittee must record a deviation in the monitoring record if a RM 9 measurement indicates an average opacity of 20% or higher over the RM 9 observation period. The no visible emissions threshold using EPA Method 22 and the 20% opacity threshold using EPA RM 9 are more stringent compliance thresholds than the 30 percent opacity limit allowed under 35 IAC

212.123(a). Thus, the required visible emissions observations would assure compliance with the 30% opacity standards. The observation frequency of weekly, monthly or quarterly, depending on the outcome of the previous observations, is adequate in this case because past inspections by the Illinois EPA have not revealed any issues with visible emissions at the source and the Illinois EPA does not have a record of air quality complaints from the community.

Because of the low-emitting nature of the operations in Plant 2, the Illinois EPA believes that the use of material balances based on pigment usage may be the most accurate and conservative means of calculating emissions for the majority of the equipment in Plant 2. Regardless, the Permit allows the Permittee to request authorization (through a permit revision) to use an alternate method for calculating PM emissions provided the Permittee can adequately justify its proposed methodology. The specified methodology requires the Permittee to take into account the solids content of each raw material as specified in the MSDS or other manufacturer-supplied specification data sheet. In addition, the Illinois EPA is specifying that the Permittee shall assume that at least 1.0% by weight of the pigments used is emitted as particulate matter from pigment handling or 20 lbs of PM per ton of pigment used, whichever is higher, unless an alternate emission factor is approved by the Illinois EPA based on a review of site-specific information. The 1.0% emission rate is based on information provided in Section 6.4 of USEPA's AP-42, Fifth Edition, Volume I (May 1983) suggesting that 0.5-1.0% of pigment used is emitted as PM. To ensure that the PM emissions estimates adequately account for all PM emissions, the Illinois EPA is asking the Permittee to use the upper limit of the AP-42 estimated emission factor unless it can demonstrate that an alternate emission factor is appropriate.

Historically, the Permittee has assumed a PM emission rate of 0.5% in its construction permit applications and other emission calculations. However, the Illinois EPA does not have sufficient justification at this time for the 0.5% emission rate. The Illinois EPA recognizes that a change to the PM emission factor as proposed in the permit may necessitate revisions to previously issued construction permits in order to better reflect actual and potential emissions of the source.

Due to insufficient data on the actual dust collector efficiency during normal operations and the overall PM emissions at the source, the Illinois EPA is not specifying the dust collector efficiency to be used by the Permittee when calculating emissions nor are we specifying how much of the PM emitted by individual equipment is sent to the dust collector. Instead, we are requiring the Permittee to document all of the assumptions it uses consistent with the emissions calculation methodology in the permit. The permit requires the Permittee to maintain records sufficient to demonstrate to the satisfaction of the Illinois EPA that appropriate capture efficiencies and/or assumptions were used by the Permittee. Because Plant 2's dust collector is operationally similar to Plant 1's dust collector, the Illinois EPA expects that the testing conducted on Plant 1's dust collector will provide valuable insight on the dust collection capability of Plant 2's dust collector.

To ensure that the dust collector operates effectively, the permit requires monthly inspections of the dust collector followed by prompt (i.e., within 15 days) repair if necessary. This inspection frequency is

appropriate in this case because the Illinois EPA's records indicate that the dust collectors at the source are generally well-maintained. For a well-maintained dust collector, the Illinois EPA does not expect the effectiveness of the dust collector to vary significantly over this monthly inspection cycle.

b. VOM Requirements

VOM emissions from Plant 2 are largely uncontrolled though minimal levels of VOM emissions might be removed with the particulate matter captured by the dust collector. The requirements that apply to VOM emissions from Plant 2 are primarily derived from Title 1 construction permits issued to the source and SIP requirements (35 IAC Part 218). These requirements include both numerical emission limits as well as work practice and operational requirements. The construction permit limits address the applicability of Title I of the Clean Air Act, specifically 35 IAC Part 203, Major Stationary Sources Construction and Modification and/or 40 CFR 52.21, PSD. These limits are designed to ensure that the construction and/or modification addressed in the respective construction permits does not constitute a new major source or major modification pursuant to these rules.

The work practice requirements are specified in Condition 5.1.1 while the numeric limits from construction permits and the Illinois SIP are included in Condition 4.2.2(c). Compliance with the work practice requirements is achieved through maintenance of records sufficient to demonstrate that the work practices were followed.

To address compliance with the numeric VOM limits, the Illinois EPA has included the following monitoring requirements in the permit:

- ✓ Use of a specific emissions calculation methodology;
- ✓ Compliance with specific recordkeeping and operational and work practice requirements in the permit.

Due to the material handling nature of the operations in Plant 2, the Illinois EPA believes that the use of material balances and EIIP equations, as discussed above, is the most accurate and conservative means of calculating VOM emissions for the majority of the equipment in Plant 2. The specified methodology requires the Permittee to take into account the VOM content of each raw material as specified in the MSDS or other manufacturer-supplied specification data sheet. The Permittee already uses these equations in its calculations and the Illinois EPA believes that this methodology yields the most reliable estimates of emissions from most equipment in Plant 2 than other available methods. The Permittee may continue to use its in-house BAM software (that incorporates the EIIP equations) to calculate emissions provided the assumptions used are consistent with the permit.

As previously discussed, USEPA estimates that about 1.0 - 2.0% of all solvents used during the paint products manufacturing operations is lost as VOM even under well-controlled circumstances. See AP-42, Section 6.4.1. Therefore, to ensure that VOM and HAP emissions are properly quantified when using material balances, the Illinois EPA is requiring the Permittee to assume that at least 2.0% of the amount of VOM contained in all solvents used in Plant 2 is emitted. The 2.0% emission rate is

the upper estimate provided in Section 6.4.1 of AP-42 and is designed to ensure that emissions are not underestimated.

Finally, the Illinois EPA is requiring the Permittee to document all of the assumptions it uses to calculate emissions consistent with the emissions calculation methodology in the permit. The permit requires the Permittee to maintain records sufficient to demonstrate to the satisfaction of the Illinois EPA that appropriate capture efficiencies and/or assumptions were used by the Permittee. For this purpose, acceptable records include, but are not limited to:

- ✓ Results from an emissions study conducted at the facility;
- ✓ Results from an emissions study conducted at a similar facility;
- ✓ A theoretical evaluation analyzing the active emissions removal processes in each section of the plant and their documented impact on emissions based on published reports, in-house studies, etc.

The Illinois EPA has not previously documented non-compliance with VOM emission limits or work practices in Plant 2, nor has the Illinois EPA documented any air quality complaints at the source. Therefore, the Illinois EPA believes that the above provisions, in addition to monitoring requirements that address compliance with other applicable requirements, are sufficient to assure compliance with the applicable VOM requirements.

c. Production and Operational Requirements

The production and operational requirements included in the permit are largely derived from construction permits issued to the source. They include production/material utilization limits, a requirement for monthly inspection of all affected equipment, and other requirements. These restrictions are primarily designed to assure compliance with the VOM limits discussed above. The production and operational limits also help assure compliance with the HAP synthetic minor limits in Condition 3.3.

To demonstrate compliance with the production and operational requirements, the Permittee must maintain appropriate records. These records will document key information necessary to calculate emissions (e.g., production rates, hours of operation, etc) and will demonstrate that the necessary inspections and maintenance activities were performed.

d. HAP Emissions

The permit includes federal requirements for HAP emissions from the source. These requirements are found at 40 CFR Part 63, Subpart CCCCCC (see Condition 5.2.1).

The Illinois EPA has reviewed the applicable provisions of this rule and determined that no additional monitoring is necessary beyond the monitoring, recordkeeping and reporting requirements inherent in 40 CFR Part 63, Subpart CCCCCC.

e. Non-Applicability Discussion

Non-applicability determinations specific to Plant 2 are found in Condition 4.2.5 of the permit.

f. Prompt Reporting Discussion

Prompt reporting of deviations has been established as 30 days. See rationale in Chapter III Section 3.9.

3.7.3 Plant 3 Manufacturing Equipment (Condition 4.3)

Due to the nature of the operations conducted in Plant 3 and based on a review of the source's annual emissions reports, the Illinois EPA does not expect the equipment in Plant 3 to generate significant quantities of emissions during normal operations.

The vast majority of the manufacturing activity in Plant 3 occurs inside of a building. Emissions from Plant 3 primarily come from process tanks, tank washers, equipment washers, and associated emissions control devices. The dispersers (mixers) and enclosed Eiger mills do not directly generate emissions but only emit indirectly through the process tanks associated with that equipment.

Plant 3 employs a dust collector (DC-3) that serves to control PM emissions and minimize visible emissions.

Table 11. Plant 3 Applicable Requirements Summary

<i>Applicable Requirement</i>	<i>Type</i>	<i>Location in the Permit</i>
Visible Emissions (Opacity) Requirement (35 IAC 212.123(a))	Applicable Standard	Condition 4.3.2(a)
PM Requirement (35 IAC 214.321(a))	Applicable Standard	Condition 4.3.2(b) (i) (A)
PM Requirement - T1 (Construction Permits 02120005, 00010010 and 04110035)	Applicable Limit	Condition 4.3.2(b) (i) (B) through (D)
VOM Requirement (35 IAC 214.301)	Applicable Standard	Condition 4.3.2(c) (i) (A)
VOM and Work Practice Requirements (35 IAC Part 218)	Applicable Standard	Condition 5.1.2
VOM Requirements - T1 (Construction Permits 00010010, 021020005 and 04110035)	Applicable Limits	Condition 4.3.2(c) (i) (B)
Production and Operational Limitations - T1 (Construction Permits 02120005, 00010010 and 04110035)	Applicable Limits	Conditions 4.3.2(d) (i) (A) through (F)
HAP Requirements (40 CFR Part 63, Subpart CCCCCC)	Applicable Standard	Condition 5.2.1

a. **Visible Emissions (i.e., Opacity) and the PM Standard in 35 IAC 214.321(a)**

As required by Section 39.5 of the Act, the Illinois EPA has addressed monitoring for the particulate matter and visible emissions standards as follows: (see Conditions 4.3.2(a)(ii) and 4.1.2(b)(ii))

- ✓ Periodic visible emissions observations as follows:
 - o Weekly observations using EPA RM 22 or RM 9 for visible emissions from the dust collector until at least 4 consecutive weeks of data indicates no visible emissions or the opacity of the emissions as determined by RM 9 is less than 20%. Thereafter, visible emissions observations may revert to a monthly basis. If no visible emissions are detected, or the opacity of the emissions as determined by RM 9 is less than 20%, after three consecutive months of observations, the observation frequency can be reduced to a quarterly basis. Monitoring shall revert to a weekly basis if any observation indicates the opacity of the emissions as determined by RM 9 to be 20% or higher. Monthly observations may resume after another 4 consecutive weeks of data indicates no visible emissions or the opacity of the emissions as determined by RM 9 is less than 20%. Quarterly monitoring may resume after no visible emissions are detected, or the opacity of the emissions as determined by RM 9 is less than 20%, after three consecutive months of additional observations;
- ✓ Use of a specific emissions calculation methodology to verify compliance with the process weight rate emission limits in Condition 4.3.2(b)(i)(A) and the Title 1 limits in Conditions 4.3.2(b)(i)(B) and (C);
- ✓ Compliance with specific recordkeeping, operational and work practice requirements in the permit.

Under the proposed visible emissions monitoring requirements, if visible emissions are observed using RM 22 or the opacity of the emissions as determined by RM 9 is 20% or higher, the Permittee is required to take corrective action within 4 hours of such observation. Corrective action may include, but is not limited to, maintenance and repair, and/or adjustment of operating parameters of the emission unit. The Permittee must record a deviation in the monitoring record if a RM 9 measurement indicates an average opacity of 20% or higher over the RM 9 observation period. The no visible emissions threshold using EPA Method 22 and the 20% opacity threshold using EPA RM 9 are more stringent compliance thresholds than the 30 percent opacity limit allowed under 35 IAC 212.123(a). Thus, the required visible emissions observations would assure compliance with the 30% opacity standards. The observation frequency of weekly, monthly or quarterly, depending on the outcome of the previous observations, is adequate in this case because past inspections by the Illinois EPA have not revealed any issues with visible emissions at the source and the Illinois EPA does not have a record of air quality complaints from the community.

Because of the low-emitting nature of the operations in Plant 3, the Illinois EPA believes that the use of material balances based on pigment usage may be the most accurate and conservative means of calculating emissions for the majority of the equipment in Plant 3. Regardless, the Permit allows the Permittee to request authorization (through a permit revision) to use an alternate method for calculating PM emissions provided the Permittee can adequately justify its proposed methodology. The specified methodology requires the Permittee to take into account the solids content of each raw material as specified in the MSDS or other manufacturer-supplied specification data sheet. In addition, the Illinois EPA is requiring the Permittee to assume that at least 1.0% by weight of the pigments used is emitted as particulate matter from pigment handling or 20 lbs of PM per ton of pigment used, whichever is higher, unless an alternate emission factor is approved by the Illinois EPA based on a review of site-specific information. The 1.0% emission rate is based on information provided in Section 6.4 of USEPA's AP-42, Fifth Edition, Volume I (May 1983) suggesting that 0.5-1.0% of pigment used is emitted as PM. To ensure that the PM emissions estimates adequately account for all PM emissions, the Illinois EPA is asking the Permittee to use the upper limit of the AP-42 estimated emission factor unless it can demonstrate that an alternate emission factor is appropriate.

Due to insufficient data on the actual dust collector efficiency during normal operations and the overall PM emissions at the source, the Illinois EPA is not specifying the dust collector efficiency to be used by the Permittee when calculating emissions nor are we specifying how much of the PM emitted by individual equipment is sent to the dust collector. Instead, we are requiring the Permittee to document all of the assumptions it uses consistent with the emissions calculation methodology in the permit. The permit requires the Permittee to maintain records sufficient to demonstrate to the satisfaction of the Illinois EPA that appropriate capture efficiencies and/or assumptions were used by the Permittee. Because Plant 3's dust collector is operationally similar to Plant 1's dust collector, the Illinois EPA expects that the testing conducted on Plant 1's dust collector will provide valuable insight on the dust collection capability of Plant 3's dust collector.

To ensure that the dust collector operates effectively, the permit requires monthly inspections of the dust collector followed by prompt (i.e., within 15 days) repair if necessary. This inspection frequency is appropriate in this case because the Illinois EPA's records indicate that the dust collectors at the source are generally well-maintained. For a well-maintained dust collector, the Illinois EPA does not expect the effectiveness of the dust collector to vary significantly over this monthly inspection cycle. Additionally, the Permittee is required to replace the dust collector filter cartridges at least once every 3 years.

b. VOM Requirements

VOM emissions from Plant 3 are largely uncontrolled though minimal levels of VOM emissions might be removed with the particulate matter captured by the dust collector. The requirements that apply to VOM emissions from Plant 3 are primarily derived from Title 1 construction permits issued to the source and SIP requirements (35 IAC Part 218). These requirements include both numerical emission limits as well as work practice and operational requirements. The construction permit limits address the applicability of Title I of the Clean Air Act, specifically 35 IAC Part

203, Major Stationary Sources Construction and Modification and/or 40 CFR 52.21, PSD. These limits are designed to ensure that the construction and/or modification addressed in the respective construction permits does not constitute a new major source or major modification pursuant to these rules.

The work practice requirements are specified in Condition 5.1.1 while the numeric limits from construction permits and the Illinois SIP are included in Condition 4.3.2(c). Compliance with the work practice requirements is achieved through maintenance of records sufficient to demonstrate that the work practices were followed.

To address compliance with the numeric VOM limits, the Illinois EPA has included the following monitoring requirements in the permit:

- ✓ Use of a specific emissions calculation methodology;
- ✓ Compliance with specific recordkeeping, operational and work practice requirements in the permit.

Due to the material handling nature of the operations in Plant 3, the Illinois EPA believes that the use of material balances and EIIP equations is the most accurate and conservative means of calculating VOM emissions for the majority of the equipment in Plant 3. The specified methodology requires the Permittee to take into account the VOM content of each raw material as specified in the MSDS or other manufacturer-supplied specification data sheet. The Permittee already uses these equations in its calculations and the Illinois EPA believes that this methodology yields the most reliable estimates of emissions from most equipment in Plant 3 than other available methods. The Permittee may continue to use its in-house emissions calculation software to calculate emissions provided the assumptions used are consistent with the permit.

As with Plants 2 and 3, to ensure that VOM and HAP emissions are properly quantified, the Illinois EPA is requiring the Permittee to assume that at least 2.0% of the amount of VOM contained in all solvents used in Plant 3 is emitted. The 2.0% emission rate represents the worst-case solvent loss rate "under well-controlled conditions".

Finally, the Illinois EPA is requiring the Permittee to document all of the assumptions it uses to calculate emissions consistent with the emissions calculation methodology in the permit. The permit requires the Permittee to maintain records sufficient to demonstrate to the satisfaction of the Illinois EPA that appropriate capture efficiencies and/or assumptions were used by the Permittee. For this purpose, acceptable records include, but are not limited to:

- ✓ Results from an emissions study conducted at the facility;
- ✓ Results from an emissions study conducted at a similar facility;
- ✓ A theoretical evaluation analyzing the active emissions removal processes in each section of the plant and their documented impact on emissions based on published reports, in-house studies, etc.

The Illinois EPA has not previously documented non-compliance with VOM emission limits or work practices in Plant 3, nor has the Illinois EPA documented any air quality complaints at the source. Therefore, the Illinois EPA believes that the above provisions, in addition to monitoring requirements that address compliance with other applicable requirements, are sufficient to assure compliance with the applicable VOM requirements.

c. Production and Operational Requirements

The production and operational requirements included in the permit are largely derived from construction permits issued to the source. They include production/material utilization limits, a requirement for monthly inspection of all affected equipment, minimum RTO afterburner temperature, and other requirements. These restrictions are primarily designed to assure compliance with the VOM limits discussed above. The production and operational limits also help assure compliance with the HAP synthetic minor limits in Condition 3.3.

To demonstrate compliance with the production and operational requirements, the Permittee must maintain appropriate records. These records will document key information necessary to calculate emissions (e.g., production rates, hours of operation, etc) and will demonstrate that the necessary inspections and maintenance activities were performed.

d. HAP Emissions

The permit includes federal requirements for HAP emissions from the source. These requirements are found at 40 CFR Part 63, Subpart CCCCCC (see Condition 5.2.1).

The Illinois EPA has reviewed the applicable provisions of this rule and determined that no additional monitoring is necessary beyond the monitoring, recordkeeping and reporting requirements inherent in 40 CFR Part 63, Subpart CCCCCC.

e. Non-Applicability Discussion

Non-applicability determinations specific to Plant 1 are found in Condition 4.1.5 of the permit.

f. Prompt Reporting Discussion

Prompt reporting of deviations has been established as 30 days. See rationale in Chapter III Section 3.9.

3.8 Insignificant Activities Discussion

The source includes a number of insignificant activities that are subject to federal and state requirements. Specifically, the source operates one 48-horsepower natural gas-fired emergency generator that is subject to 40 CFR Part 60, Subpart JJJJ (NSPS for Stationary Spark Ignition Internal Combustion Engines) and 40 CFR Part 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines). Pursuant to 40 CFR 63.6590(c), the affected engine complies with 40 CFR Part 63, Subpart ZZZZ, by complying with 40 CFR Part 60, Subpart JJJJ. No further requirements apply to the affected engine under 40 CFR Part 63, Subpart ZZZZ.

The source also operates a number of paint and allied products manufacturing equipment that are subject to 35 IAC Part 218 and 40 CFR Part 63, Subpart CCCCCC (NESHAP for paints and allied products manufacturing area areas).

Table 12 lists the activities at the source that the Illinois EPA has determined to be insignificant based on size or emissions, pursuant to 35 IAC 201.210 and 201.211. Pursuant to Sections 9.1(d) and 39.5(6)(a) of the Act, the insignificant activities at the source must comply with all applicable standards promulgated pursuant to Sections 111, 112, 165, or 173 of the Clean Air Act, in addition to any standards codified in Illinois' regulations.

Table 12. Listing of Insignificant Activities at the Source.

<i>Insignificant Activity</i>	<i>Number of Units</i>	<i>Insignificant Activity Category</i>
Natural gas-fired emergency stationary reciprocating internal combustion engine rated at 48 brake horsepower (HP).	1	35 IAC 201.210(a) (15)
Plant 1		
Lab Spray Hood H-1	1	35 IAC 201.210(a) (13)
Walk in Hood WIH	1	35 IAC 201.210(a) (13)
Fill line P1FL	1	35 IAC 201.211(a)
Direct combustion units used for comfort heating and fuel combustion emission units as further detailed in 35 IAC 201.210(a) (4).	6	35 IAC 201.210(a) (4)
Plant 2		
Lab Spray Hood H-2	1	35 IAC 201.210(a) (13)
Solvent Recovery Unit ROTO3	1	35 IAC 201.211(a)
Fill line P2FL	1	35 IAC 201.211(a)
Direct combustion units used for comfort heating and fuel combustion emission units as further detailed in 35 IAC 201.210(a) (4).	9	35 IAC 201.210(a) (4)
Plant 3		
Portable Fill line P3PFL	1	35 IAC 201.211(a)
Lab Spray Booth P3H1	1	35 IAC 201.210(a) (13)
Direct combustion units used for comfort heating and fuel combustion emission units as further detailed in 35 IAC 201.210(a) (4).	12	35 IAC 201.210(a) (4)

3.9 Prompt Reporting Discussion

Among other terms and conditions, CAAPP Permits contain reporting obligations to assure compliance with applicable requirements. These reporting obligations are generally four-fold. More specifically, each CAAPP Permit sets forth any reporting requirements specified by state or federal law or regulation, requires prompt reports of deviations from applicable requirements, requires reports of deviations from required monitoring and requires a report certifying the status of compliance with terms and conditions of the CAAPP Permit over the calendar year.

The number and frequency of reporting obligations in any CAAPP Permit is source-specific. That is, the reporting obligations are directly related to factors, including the number and type of emission units and applicable requirements, the complexity of the source and the compliance status. This four-fold approach to reporting is common to virtually all CAAPP Permits as described below. Moreover, this is the approach established in the Draft CAAPP Permit for this source.

Regulatory Reports

Many state and federal environmental regulations establish reporting obligations. These obligations vary from rule-to-rule and thus from CAAPP source to CAAPP source and from CAAPP Permit to CAAPP Permit. The variation is found in the report triggering events, reporting period, reporting frequency and reporting content. Regardless, the CAAPP makes clear that all reports established under applicable regulations shall be carried forward into the CAAPP Permit as stated in Section 39.5(7)(b) of the Illinois Environmental Protection Act. Generally, where sufficiently detailed to meet the exacting standards of the CAAPP, the regulatory reporting requirements are simply restated in the CAAPP Permit. Depending on the regulatory obligations, these regulatory reports may also constitute a deviation report as described below.

The Draft CAAPP Permit for this source would embody all regulatory reporting as promulgated under federal and state regulations under the Clean Air Act and the Illinois Environmental Protection Act. Depending on the frequency of the report, the regulatory report may also satisfy the prompt reporting obligations discussed below. These reports must be certified by a responsible official.

These reports are generally found in the reporting sections for each emission unit group. The various regulatory reporting requirements are summarized in the table at the end of this Reporting Section.

Deviation Reports (Prompt Reporting)

Section 39.5(7)(f)(ii) of the Illinois Environmental Protection Act mandates that each CAAPP Permit require prompt reporting of deviations from the permit requirements.

Neither the CAAPP nor the federal rules upon which the CAAPP is based and was approved by USEPA define the term "prompt". Rather, 40 CFR Part 70.6(a)(3)(iii)(B) intended that the term have flexibility in application. The USEPA has acknowledged for purposes of administrative efficiency and clarity that the permitting authority (in this case, Illinois EPA) has the discretion to define "prompt" in relation to the degree and type of deviation likely to occur at a particular source. The Illinois EPA follows this approach and defines prompt reporting on a permit-by-permit basis. In instances where the underlying applicable requirement contains "prompt" reporting, the Illinois EPA typically incorporates the pre-established timeframe in the CAAPP permit (e.g. a NESHAP or NSPS deviation report). Where the underlying applicable requirement fails to explicitly set forth the timeframe for reporting deviations, the Illinois EPA generally uses a timeframe of 30 days to define prompt reporting of deviations.

This approach to prompt reporting of deviations as discussed herein is consistent with the requirements of Section 39.5(7)(f)(ii) of the Illinois Environmental Protection Act as well as 40 CFR Part 70 and the CAA. The

reporting arrangement is designed so that the source will appropriately notify the Illinois EPA of those events that might warrant attention. The timing for these event-specific notifications is necessary and appropriate as it gives the source enough time to conduct a thorough investigation into the causes of an event, collecting any necessary data, and developing preventive measures, to reduce the likelihood of similar events, all of which must be addressed in the notification for the deviation, while at the same time affording regulatory authority and the public timely and relevant information. The approach also affords the Illinois EPA and USEPA an opportunity to direct investigation and follow-up activities, and to make compliance and enforcement decisions in a timely fashion.

The Draft CAAPP Permit for this source would require prompt reporting as required by the Illinois Environmental Protection Act in the fashion described in this subsection. In addition, pursuant to Section 39.5(7)(f)(i) of the Illinois Environmental Protection Act, this Draft CAAPP Permit would also require the source to provide a summary of all deviations with the Semi-Annual Monitoring Report. These reports must be certified by a responsible official, and are generally found in the reporting sections for each emission unit group.

Semi-Annual Monitoring Reports

Section 39.5(7)(f)(i) of the Illinois Environmental Protection Act mandates that each CAAPP Permit require a report relative to monitoring obligations as set forth in the permit. Depending upon the monitoring obligation at issue, the semi-annual monitoring report may also constitute a deviation report as previously discussed. This monitoring at issue includes instrumental and non-instrumental emissions monitoring, emissions analyses, and emissions testing established by state or federal laws or regulations or as established in the CAAPP Permit. This monitoring also includes recordkeeping. Each deviation from each monitoring requirement must be identified in the relevant semi-annual report. These reports provide a timely opportunity to assess for compliance patterns of concern. The semi-annual reports shall be submitted regardless of any deviation events. Reporting periods for semi-annual monitoring reports are January 1 through June 30 and July 1 through December 31 of each calendar year. Each semi-annual report is due within 30 days after the close of reporting period. The reports shall be certified by a responsible official. The Draft CAAPP Permit for this source would require such reports at Condition 3.6(b).

Annual Compliance Certifications

Section 39.5(7)(p)(v) of the Illinois Environmental Protection Act mandates that each CAAPP Permit require a source to submit a certification of its compliance status with each term and condition of its CAAPP Permit. The reports afford a broad assessment of a CAAPP sources compliance status. The CAAPP requires that this report be submitted, regardless of compliance status, on an annual basis. Each CAAPP Permit requires this annual certification be submitted by May 1 of the year immediately following the calendar year reporting period. The report shall be certified by a responsible official. The Draft CAAPP Permit for this source would require such a report at Condition 2.6(a).

Prompt reporting of deviations is critical in order to have timely notice of deviations and the opportunity to respond, if necessary. The effectiveness of the permit depends upon, among other important elements, timely and accurate reporting. The Illinois EPA, USEPA, and the public rely on timely and accurate reports submitted by the source to measure compliance and to

direct investigation and follow-up activities. Prompt reporting is evidence of the source's good faith in disclosing deviations and describing the steps taken to return to compliance and prevent similar incidents.

Any occurrence that results in an excursion from any emission limitation, operating condition, or work practice standard as specified in this Draft CAAPP Permit is a deviation subject to prompt reporting. Additionally, any failure to comply with any permit term or condition is a deviation of that permit term or condition and must be reported to the Illinois EPA as a permit deviation. The deviation may or may not be a violation of an emission limitation or standard. A permit deviation can exist even though other indicators of compliance suggest that no emissions violation or exceedance has occurred. Reporting permit deviations does not necessarily result in enforcement action. The Illinois EPA has the discretion to take enforcement action for permit deviations that may or may not constitute a deviation from an emission limitation or standard or the like, as necessary and appropriate.

As a result, the Illinois EPA's approach to prompt reporting of deviations as discussed herein is consistent with the requirements of Section 39.5(7)(f)(ii) of the Illinois Environmental Protection Act as well as 40 CFR Part 70 and the CAA. This reporting arrangement is designed so that the source will appropriately notify the Illinois EPA of those events that might warrant individual attention.

3.10 Start-up/Shutdown/Malfunction Breakdown Discussion

- **Federal Start-up/Shutdown/Malfunction-Breakdown Authorization Discussion**

As originally adopted, the General Provisions of the NESHAP, 40 CFR Part 63 Subpart A (40 CFR 63.6(f) and (h)) provided that the limits of the NESHAP generally did not apply during startup, shutdown and malfunction (SSM) events (the "SSM Exemption") unless otherwise provided in a particular subpart for a particular category of source or emissions unit.⁴ However, in December 2008, a US Court of Appeals decision in *Sierra Club v. EPA*, 551 F.3d 1019 (D.C. Cir. 2008), vacated this SSM Exemption.⁵

On July 22, 2009, Adam Kushner, Director of the Office of Civil Enforcement of the USEPA issued guidance identifying the categories of sources that would no longer be exempt from applicable numerical NESHAP standards during startup, shutdown, and malfunction as a result of the vacatur of the SSM exemption (the SSM Vacatur). This guidance states that the SSM vacatur immediately affects only the NESHAP standards for source categories that both (i) incorporate the SSM Exemption by reference and (ii) contain no other regulatory text that provides an exemption or exception from otherwise applicable limits during startup, shutdown or malfunction events. The NESHAP standards for many source categories contain such separate category-specific exemption language for startup, shutdown and malfunction events. These provisions were not at issue in the *Sierra Club* case and decision, and accordingly those separate provisions would not be affected by the vacatur of the SSM Exemption in 40 CFR 63 Subpart A. The guidance identifies the NESHAP standards for various categories of sources that would be affected by the SSM vacatur and the standards for other categories of sources that would not be affected ("Table 1" and "Table 2," respectively, of the guidance).⁶

3.11 Incorporation by Reference Discussion

Based on guidance found in White Paper 2 and past petition responses by the Administrator, it is recognized that Title V permit authorities may, within their discretion, incorporate plans by reference. As recognized in the *White Paper 2*, permit authorities can effectively streamline the contents of a Title V permit, avoiding the inevitable clutter of restated text and preventing unnecessary delays where, as here, permit issuance is subject to a decision deadline.⁷ However, it is also recognized that the benefits of incorporation of plans must be carefully balanced by a permit authority with its duty to issue permits in a way that is "clear and meaningful" to the Permittee and the public.⁸

The criteria that are mentioned in USEPA Administrator Petition Responses stress the importance of identifying, *with specificity*, the object of the incorporation.⁹ The Illinois EPA agrees that such emphasis is generally consistent with USEPA's pronouncements in previous guidance.

For each condition incorporating a plan, the Illinois EPA is also briefly describing the general manner in which the plan applies to the source. Identifying the nature of the source activity, the regulatory requirements or the nature of the equipment associated with the plan is a recommendation of the *White Paper 2*¹⁰. The Illinois EPA has stopped short of enumerating the actual contents of a plan, as restating them in the permit would plainly defeat the purpose of incorporating the document by reference and be contrary to USEPA guidance on the subject.¹¹

Plans may need to be revised from time to time, as occasionally required by circumstance or by underlying rule or permit requirement. Except where expressly precluded by the relevant rules, this Draft CAAPP Permit allows the Permittee to make future changes to a plan without undergoing formal permit revision procedures. This approach will allow flexibility to make required changes to a plan without separately applying for a revised permit and, similarly, will lessen the impacts that could result for the Illinois EPA if every change to a plan's contents required a permitting transaction.¹² Changes to the incorporated plans during the permit term are automatically incorporated into the Draft CAAPP Permit unless the Illinois EPA expresses a written objection.

The Draft CAAPP Permit incorporates by reference the following plans: Fugitive Particulate Matter Operating Program (Condition 3.2(a) - Construction Permit 12050056 (T1) and GCCS design plan (Condition 4.1.2(e)).¹³

3.12 Periodic Monitoring General Discussions

Pursuant to Section 504(c) of the Clean Air Act, a Title V permit must set forth monitoring requirements, commonly referred to as "Periodic Monitoring", to assure compliance with the terms and conditions of the permit. A general discussion of Periodic Monitoring is provided below. The Periodic Monitoring that is proposed for specific operations and emission units and at this source is discussed in Chapter III of this Statement of Basis. Chapter III provides a narrative discussion of and justification for the elements of Periodic Monitoring that would apply to the different emission units and types of emission units at the facility.

As a general matter, the required content of a CAAPP Permit with respect to such Periodic Monitoring is addressed in Section 39.5(7) of the Illinois

Environmental Protection Act.¹⁴ Section 39.5(7)(b) of the Illinois Environmental Protection Act¹⁵ provides that in a CAAPP Permit:

The Agency shall include among such conditions applicable monitoring, reporting, record keeping and compliance certification requirements, as authorized by paragraphs d, e, and f of this subsection, that the Agency deems necessary to assure compliance with the Clean Air Act, the regulations promulgated thereunder, this Act, and applicable Board regulations. When monitoring, reporting, record keeping and compliance certification requirements are specified within the Clean Air Act, regulations promulgated thereunder, this Act, or applicable regulations, such requirements shall be included within the CAAPP Permit.

Section 39.5(7)(d)(ii) of the Illinois Environmental Protection Act further provides that a CAAPP Permit shall:

Where the applicable requirement does not require periodic testing or instrumental or noninstrumental monitoring (which may consist of recordkeeping designed to serve as monitoring), require Periodic Monitoring sufficient to yield reliable data from the relevant time period that is representative of the source's compliance with the permit ...

Accordingly, the scope of the Periodic Monitoring that must be included in a CAAPP Permit is not restricted to monitoring requirements that were adopted through rulemaking or imposed through permitting. When applicable regulatory emission standards and control requirements or limits and control requirement in relevant Title 1 permits are not accompanied by compliance procedures, it is necessary for Monitoring for these standards, requirements or limits to be established in a CAAPP Permit.^{16, 17} Monitoring requirements must also be established when standards and control requirement are accompanied by compliance procedures but those procedures are not adequate to assure compliance with the applicable standards or requirements.^{18, 19} For this purpose, the requirements for Periodic Monitoring in a CAAPP Permit may include requirements for emission testing, emissions monitoring, operational monitoring, non-instrumental monitoring, and recordkeeping for each emission unit or group of similar units at a facility, as required by rule or permit, as appropriate or as needed to assure compliance with the applicable substantive requirements. Various combinations of monitoring measures will be appropriate for different emission units depending on their circumstances, including the substantive emission standards, limitations and control requirements to which they are subject.

What constitutes sufficient Periodic Monitoring for particular emission units, including the timing or frequency associated with such Monitoring requirements, must be determined by the permitting authority based on its knowledge, experience and judgment.²⁰ For example, as Periodic Monitoring must collect representative data, the timing of Monitoring requirements need not match the averaging time or compliance period of the associated substantive requirements, as set by the relevant regulations and permit provisions. The timing of the various requirements making up the Periodic Monitoring for an emission unit is something that must be considered when those Monitoring requirements are being established. For this purpose, Periodic Monitoring often consists of requirements that apply on a regular basis, such as routine recordkeeping for the operation of control devices or the implementation of the control practices for an emission unit. For certain units, this regular monitoring may entail "continuous" monitoring of emissions, opacity or key operating parameters of a

process or its associated control equipment, with direct measurement and automatic recording of the selected parameter(s). As it is infeasible or impractical to require emissions monitoring for most emission units, instrumental monitoring is more commonly conducted for the operating parameters of an emission unit or its associated control equipment. Monitoring for operating parameter(s) serves to confirm proper operation of equipment, consistent with operation to comply with applicable emission standards and limits. In certain cases, an applicable rule may directly specify that a particular level of an operating parameter be maintained, consistent with the manner in which a unit was being operated during emission testing. Periodic Monitoring may also consist of requirements that apply on a periodic basis, such as inspections to verify the proper functioning of an emission unit and its associated controls.

The Periodic Monitoring for an emission unit may also include measures, such as emission testing, that would only be required once or only upon specific request by the Illinois EPA. These requirements would always be accompanied by Monitoring requirements that would apply on a regular basis. When emission testing or other measure is only required upon request by the Illinois EPA, it is included as part of the Periodic Monitoring for an emission unit to facilitate a response by the Illinois EPA to circumstances that were not contemplated when Monitoring was being established, such as the handling of a new material or a new mode of operation. Such Monitoring would also serve to provide further verification of compliance, along with other potentially useful information. As emission testing provides a quantitative determination of compliance, it would also provide a determination of the margin of compliance with the applicable limit(s) and serve to confirm that the Monitoring required for an emission unit on a regular basis is reliable and appropriate. Such testing might also identify specific values of operating parameters of a unit or its associated control equipment that accompany compliance and can be relied upon as part of regular Monitoring.

There are a number of considerations or factors that are or may be relevant when evaluating the need to establish new monitoring requirements as part of the Periodic Monitoring for an emission unit. These factors include: (1) The nature of the emission unit or process and its emissions; (2) The variability in the operation and the emissions of the unit or process over time; (3) The use of add-on air pollution control equipment or other practices to control emissions and comply with the applicable substantive requirement(s); (4) The nature of that control equipment or those control practices and the potential for variability in their effectiveness; (5) The nature of the applicable substantive requirement(s) for which Periodic Monitoring is needed; (6) The nature of the compliance procedures that specifically accompany the applicable requirements; (7) The type of data that would already be available for the unit; (8) The effort needed to comply with the applicable requirements and the expected margin of compliance; (9) The likelihood of a violation of applicable requirements; (10) The nature of the Periodic Monitoring that may be readily implemented for the emission unit; (11) The extent to which such Periodic Monitoring would directly address the applicable requirements; (12) The nature of Periodic Monitoring commonly required for similar emission units at other facilities and in similar circumstances; (13) The interaction or relationship between the different measures in the Periodic Monitoring for an emission unit; and (14) The feasibility and reasonableness of requiring additional measures in the Periodic Monitoring for an emission unit in light of other relevant considerations.²¹

CHAPTER IV – CHANGES FROM PREVIOUSLY ISSUED CAAPP PERMITS

4.1 Major Changes Summary

This renewal CAAPP draft is presented in a new format. The new format is the result of recommendations by the USEPA, comments made by sources, and interactions with the public.

	<i>Previous CAAPP Permit Layout</i>	<i>New CAAPP Permit Layout</i>
Section 1	Source Identification	Source Information
Section 2	List Of Abbreviations/Acronyms	General Permit Requirements
Section 3	Insignificant Activities	Source Requirements
Section 4	Significant Emission Units	Emission Unit Requirements
Section 5	Overall Source Conditions	Title I Requirements
Section 6	Emission Control Programs	Insignificant Activities
Section 7	Unit Specific Conditions	Other Requirements
Section 8	General Permit Conditions	State Only Requirements
Section 9	Standard Permit Conditions	---
Section 10	Attachments	Attachments

4.2 Specific Permit Condition Changes

The biggest change was the incorporation of the new and removal of obsolete Title 1 limitations as shown in Section 2.8 of the SOB.

- Newly Issued Construction Permits: None
- Extraneous or Obsolete T1 Conditions:²² See Section 2.8.2 of this Statement of Basis.
- New Title 1 Conditions: See Section 2.8.3 of this Statement of Basis.

Endnotes

¹ The federal PSD program, 40 CFR 52.21, applies in Illinois. The Illinois EPA administers PSD permitting for major projects in Illinois pursuant to a delegation agreement with USEPA.

² Illinois has a state nonattainment NSR program, pursuant to state rules, Major Stationary Sources Construction and Modification ("MSSCM"), 35 IAC Part 203, which have been approved by USEPA as part of the State Implementation Plan for Illinois.

³ The incorporation, or carry-over, of terms or conditions from previous Title I permits into Title V permits typically does not occur on a wholesale basis. Recognizing that construction permits may frequently contain obsolete or extraneous terms and conditions, USEPA has emphasized that only "environmentally significant terms" from previous preconstruction permits must be carried over into Title V permits. See, White Paper for Streamlined Development of Part 70 Permit Applications, dated July 10, 1995. Therefore, certain T1 terms and conditions have not been carried over from these SIP approved permits for reasons that are explained below.

⁴ During startup, shutdown and malfunction, a source was instead required to minimize emissions of subject emission units in a manner consistent with good air pollution control practice. A startup shutdown and malfunction plan must be maintained by a source setting forth how it operate emission units to minimize emissions during events, ideally so that they are not accompanied by any violations of the applicable standards. Finally, the term "malfunction" is also narrowly defined under the NESHAP. Malfunctions only include events that are sudden, infrequent and not reasonably preventable. Events that are caused, even in part, by poor maintenance or careless operation are not malfunctions for purposes of any SSM exemption.

⁵ The *Sierra Club* decision has created concern for the sources that are subject to NESHAP standards and have relied upon the SSM Exemption. For some source categories, the technological capability to maintain compliance with numerical NESHAP standards during SSM events may not currently exist. Numerical standards were also adopted without critical consideration necessarily having been given to whether those standards could reasonably and appropriately be met during startup, shutdown or malfunction events. Consequently, the vacatur of the SSM Exemption creates uncertainty and concern about how to apply these NESHAP standards pertaining to such events.

⁶ The USEPA guidance contains a caveat. USEPA recognizes that the source category-specific SSM exemption provisions may be challenged separately. As such, the analysis in its guidance could be subject to change. USEPA indicates that it intends to evaluate which source category-specific SSM exemption provisions should be revised. The Illinois EPA is not aware of any such specific challenges that have been made to source category-specific SSM exemption provisions in the NESHAP.

⁷ Among other things, USEPA observed that the stream-lining benefits can consist of "reduced cost and administrative complexity, and continued compliance flexibility...". *White Paper 2*, page 41.

⁸ See, In the Matter of Tesoro Refining and Marketing, Petition No. IX-2004-6, Order Denying in Part and Granting in Part Petition for Objection to Permit, at page 8 (March 15, 2005); see also, White Paper 2 at page 39 ("reference must be detailed enough that the manner in which any referenced materials applies to a facility is clear and is not reasonably subject to misinterpretation").

⁹ The Order provides that permit authorities must ensure the following: "(1) referenced documents be specifically identified; (2) descriptive information such as the title or number of the document and the date of the document be included so that there is no ambiguity as to which version of the document is being referenced; and (3) citations, cross references, and incorporations by reference are detailed enough that the manner in which any referenced material applies to a facility is clear and is not reasonably subject to misinterpretation." See, Petition Response at page 43, citing White Paper 2 at page 37.

¹⁰ See, White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program, March 5, 1996, at page 39.

¹¹ Nothing in USEPA guidance, including the White Paper 2 or previous orders responding to public petitions, supports the notion that permit authorities incorporating a document by reference must also restate contents of a given plan in the body of the Title V permit. Such an interpretation contradicts USEPA recognition that permit authorities need not restate or recite an incorporated document so long as the document is sufficiently described. White Paper 2 at page 39; see also, In the matter of Consolidated Edison Co. of New York, Inc., 74th St. Station, Petition No. II-2001-02, Order Granting in Part and Denying in Part Petition for Objection to Permit at page 16 (February 19, 2003).

¹² This approach is consistent with USEPA guidance, which has previously embraced a similar approach to certain SSM plans. See, Letter and Enclosures, dated May 20, 1999, from John Seitz, Director of Office of Air Quality Planning and Standards, to Robert Hodanbosi and Charles Lagges, STAPPA/ALAPCO, pages 9-10 of Enclosure B.

¹³ Each incorporated plan addressed by this Section of the Statement of Basis is part of the source's permit file. As such, any person interested in viewing the contents of a given plan may do so at the public repository during the comment period or, alternatively, may request a copy of the same from the Illinois EPA under the Freedom of Information Act. See also 71 FR 20447.

¹⁴ The provisions of the Act for Periodic Monitoring in CAAPP permits reflect parallel requirements in the federal guidelines for State Operating Permit Programs, 40 CFR 70.6(a)(3)(i)(A), (a)(3)(i)(B), and (c)(1).

¹⁵ Section 39.5(7)(p)(i) of the Act also provides that a CAAPP permit shall contain "Compliance certification, testing, monitoring, reporting and record keeping requirements sufficient to assure compliance with the terms and conditions of the permit."

¹⁶ The classic example of regulatory standards for which Periodic Monitoring requirements must be established in a CAAPP permit are state emission standards that pre-date the 1990 Clean Air Act Amendments that were adopted without any associated compliance procedures. Periodic Monitoring must also be established in a CAAPP permit when standards and limits are accompanied by compliance

procedures but those procedures are determined to be inadequate to assure compliance with the applicable standards or limits.

¹⁷ Another example of emission standards for which requirements must be established as part of Periodic Monitoring is certain NSPS standards that require initial performance testing but do not require periodic testing or other measures to address compliance with the applicable limits on a continuing basis.

¹⁸ The need to establish Monitoring requirements as part of Periodic Monitoring when existing compliance procedures are determined to be inadequate, as well as when they are absent, was confirmed by the federal appeals court in *Sierra Club v. Environmental Protection Agency*, 536 F.3d 673, 383 U.S. App. D.C. 109.

¹⁹ The need to establish Monitoring requirements as part of Periodic Monitoring is also confirmed in USEPA's Petition Response. USEPA explains that "...if there is periodic monitoring in the applicable requirements, but that monitoring is not sufficient to assure compliance with permit terms and conditions, permitting authorities must supplement monitoring to assure such compliance." Petition Response, page 6.

²⁰ The test for the adequacy of "Periodic Monitoring" is a context-specific determination, particularly whether the provisions in a Title V permit reasonably address compliance with relevant substantive permit conditions. 40 CFR 70.6(c)(1); see also 40 CFR 70.6(a)(3)(i)(B); see also, *In the Matter of CITGO Refinery and Chemicals Company L.P.*, Petition VI-2007-01 (May 28, 2009); see also, *In the Matter of Waste Management of LA. L.L.C. Woodside Sanitary Landfill & Recycling Center, Walker, Livingston Parish, Louisiana*, Petition VI-2009-01 (May 27, 2010); see also, *In the Matter of Wisconsin Public Service Corporation's JP Pulliam Power Plant*, Petition V-2009-01 (June 28, 2010).

²¹ A number of these factors are specifically listed by USEPA in its Petition Response. USEPA also observes that the specific factors that it identifies in its Petition Response with respect to Periodic Monitoring provide "...the permitting authority with a starting point for its analysis of the adequacy of the monitoring; the permitting authority also may consider other site-specific factors." Petition Response, page 7.

²² The incorporation, or carry-over, of terms or conditions from previous Title I permits into Title V permits typically does not occur on a wholesale basis. Recognizing that construction permits may frequently contain obsolete or extraneous terms and conditions, USEPA has emphasized that only "environmentally significant terms" from previous preconstruction permits must be carried over into Title V permits. See, White Paper for Streamlined Development of Part 70 Permit Applications, dated July 10, 1995. Therefore, certain T1 terms and conditions have not been carried over from these SIP approved permits for reasons that are explained below.